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AUTHOR	Gilpatrick, Eleanor
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ABSTRACT

The third of four volumes in Research Report No. 7 of the Health Services Mobility Study (HSMS), this book contains 149 diagnostic radiologist task descriptions that cover activities in the area of nursing (patient care), film processing, quality assurance, radiation protection, machine maintenance, housekeeping, and administration at the departmental level. (The medical activities of radiologists are covered in Volume 1 and the patient procedures of radiologic technologists are covered in Volume 2. The first three volumes present the tasks in a given area in numerical order by code number. Volume 4 is an index of all the tasks in the three volumes.) These task descriptions are offered for use as instructional materials, as inputs to the design of career ladders, for the structuring of jobs and assignment of work to job titles, and as inputs to the development of performance evaluation instruments and proficiency tests. Chapter I of this volume defines "tasks" and tells how the descriptions were developed. The task descriptions are presented in numerical order by code number in Chapter 3 where the steps of the task are described in logical sequence in considerable detail. Chapter 2 is a guide to the tasks arranged in logical groupings (1) by function, such as patient care, quality assurance, radiation protection; and (2) by type of recipient, such as patient or co-worker. (HD)

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TASK DESCRIPTIONS IN DIAGNOSTIC RADIOLOGY

Research Report No. 7

Volume 3

MACHINE-RELATED, PATIENT CARE AND ADMINISTRATIVE TASKS:

What Radiologists, Technologists, Nurses and Physicists Do To Run Things and Look After Patients and Equipment

by
Eleanor Gilpatrick, Director
Health Services Mobility Study

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We appreciate the interview time given us by members of the staff at Montefiore Hospital and Medical Center. In the area of patient care, they include Betty Delaney and Ronnie West, as well as the radiologists and radiologic technologists acknowledged in Volumes 1 and 2 of this Report. In the area of quality assurance at Montefiore we interviewed Alan Schoenfeld and George Zacharopoulos. We also interviewed leading physicists in two other locations. These are Dr. Richard Dobrin, Attending Physicist at New York University Medical Center, University Hospital, and at Bellevue Hospital, and Shirley Vickers, Director of Medical Radiation Physics at the Catholic Medical Center of Brooklyn and Queens.

Our reviewers for the patient care tasks include those already acknowledged in Volumes 1 and 2, and Dr. Gary Arsham, Associate Professor, School of Medical Sciences, Pacific Medical Center, San Francisco, Jane Coyne, Director of Nursing, Montefiore Hospital, Audrey Jacobson, on the nursing staff of Veteran's Administration Hospital, West Haven, Connecticut, and Dr. Richard H. Kessler, Associate Dean, Medical School, Northwestern University.

Francis N. Ham, Jr., Field Engineer at EMI Medical Inc., reviewed and helped us revise our tasks in computerized transverse axial tomography (C.T.T.). Mitchell L. Finkelstein, formerly Assistant Chief Technologist at Montefiore Hospital, Gene Moss, on the staff of the National Institute of Occupational Safety and Health (formerly with BRH), and members of the training specialist staff of Pfizer Medical Systems, Inc. also reviewed the C.T.T. tasks.

The tasks in quality assurance and radiation protection were reviewed by Richard Dobrin and Gene Moss, mentioned above, and Dr. Robert G. Waggener, Chairman of the Diagnostic Radiology Committee, American Association of Physicists in Medicine and Associate Professor, Radiology Department, University of Texas Health Science Center, San Antonio, Texas.

We thank everyone for their help. Any mistakes remaining or controversial issues still unresolved in the task descriptions are solely the responsibility of the Health Services Mobility Study.

The field work for these task descriptions was carried out by HSMS job analysts Craig Allen, Jeanne Bertelle, Albertine Brown, Lynn Jackson, Sandra Ostling, and Larry Steinhorn. The very demanding job of typing the tasks was carried out by Julia M. Caldwell and James Green.

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PREFACE

The Health Services Mobility Study (HSMS) has been involved in research in the health manpower field in the United States since 1967. It has designed methods to analyze jobs, create job ladders, develop curriculum objectives, and evaluate performance. HSMS is sponsored by the City University of New York (CUNY) through the Research Foundation and the Hunter College School of Health Sciences. Since 1967, funding for HSMS has come from the Office of Economic Opportunity, the Health Services and Mental Health Administration and the Bureau of Health Manpower, both of HEW, and, primarily, the U. S. Department of Labor, Manpower Administration, now the Employment and Training Administration. The Director of the Project, Eleanor Gilpatrick, holds the rank of Associate Professor at the Hunter College School of Health Sciences, City University of New York.

This report presents the core data of the first application of the HSMS task analysis method to an entire functional area, i.e., Diagnostic Radiology. This work is reported in two Research Reports as follows:

Research Rpt. No. 7	TASK DESCRIPTIONS IN DIAGNOSTIC RADIOLOGY
Vol. 1	Medical Tasks: What the Radiologist Does.
Vol. 2	Radiologic Technologist Tasks Dealing With Patient Procedures.
Vol. 3	Machine-Related, Patient Care and Administrative Tasks: What Radiologists, Technologists, Nurses, and Physicists Do To Run Things and Look After Patients and Equipment.
Vol. 4	Index of Tasks by Code Number and Extended Name.

These four volumes are the "core" documents, i.e., they present approved "normative" task descriptions in radiology. The first three volumes present the tasks in a given area in numerical order by code number. Each document describes how the tasks were developed and how to read them. Each includes listings that arrange the tasks by specialty or function. Volume 4 summarizes the tasks presented in the first three volumes. It lists the extended names of all the tasks in numerical order by task code number, citing the volume in which the task description is to be found.

Research Rpt. No. 8	USING TASK DATA IN DIAGNOSTIC RADIOLOGY
Vol. 1	Job Ladders in Diagnostic Radiology: Assigning Tasks to Jobs.
Vol. 2	Safe Practice and Radiation Health Protection Aspects of Tasks.
Vol. 3	Curriculum Objectives For Radiologic Technology.

These volumes make use of and refer to the tasks presented in Research Report No. 7. Therefore, only the abbreviated names of tasks and their code numbers are used when the tasks are discussed.

Volume 1 shows the assignment of tasks to levels, indicates how tasks relate to one another, and makes recommendations on a job ladder and job structuring. It summarizes and includes the skill and knowledge data related to the tasks in Research Report No. 7. It tells the hospital administrator how to use the data for assigning tasks to titles and jobs.

Volume 2 highlights the safe practice features of the task descriptions.

Volume 3 presents the curriculum objectives for use in an educational program at the radiologic technologist level. Research Report No. 7 serves as instructional materials in connection with this volume.

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FOREWORD

The Bureau of Radiological Health of the Food and Drug Administration is responsible for minimizing unnecessary exposure of the population to radiation, including that used in medicine. The Bureau's programs include activities to improve the education of health care personnel in the safe use of radiation. This is important because adequate education of professional and ancillary personnel who prescribe, conduct or interpret radiologic examinations is a crucial determinant in assuring optimum medical care with minimum radiation exposure.

The educational process in the medical radiation area, as in any field, can be most effective when it is based upon the actual tasks and responsibilities which individuals will be called upon to undertake in practice. Systematically and comprehensively identifying and describing those tasks is thus an important prerequisite in designing effective curricula and credentialing tools. The type of research which is represented by the series of projects entitled "Task Descriptions in Diagnostic Radiology," conducted by the Health Services Mobility Study, can be an important step in this direction. These particular projects, culminating in several individual reports, contain task descriptions and curriculum objectives of remarkable depth and scope, including much material on protecting patients against unnecessary radiation exposure.

Although the Bureau of Radiological Health has not contributed to the design of these projects or to the content of the reports, we hope that they can serve as a useful resource for those responsible for designing basic and continuing educational programs for medical radiation users, and thus that they can contribute to the safe and effective use of radiation in medical diagnosis.

Mark Barnett
Associate Director
Division of Training [illegible]dical Applications
Bureau of Radiological Health
Food and Drug Administration

CHAPTER 1

ABOUT THE TASK DESCRIPTIONS

INTRODUCTION

Research Report No. 7 is a product of the first full-scale demonstration of the task description method of the Health Services Mobility Study (HSMS). All the work found in a department of Diagnostic Radiology is presented as task descriptions in the three volumes of the Report.

This volume contains 149 task descriptions that can be found in the work done by radiologists, radiologic technologists, nurses, attendants, clerks, aides, and/or physicists in a diagnostic radiology department, depending on how the institution structures its jobs. The tasks cover activities in the areas of nursing (patient care), film processing, materials and machine preparation and maintenance, housekeeping, and administration at the departmental level. We include the quality assurance and radiation protection tasks that relate to diagnostic radiology.

The medical work carried out by radiologists is presented in Volume 1; the patient examination work carried out by radiologic technologists is presented in Volume 2. Volume 4 is an index of all the tasks in the three volumes.

These task descriptions are offered for use as instructional materials, as inputs to the design of career ladders, for the structuring of jobs and assignment of work to job titles, and as inputs to the development of performance evaluation instruments and proficiency tests. In Research Report No. 8, HSMS uses technologist-level tasks to design curriculum objectives. In addition, because the descriptions present desirable work behaviors, we believe that the task descriptions can be used to improve the quality of work, especially with regard to radiation protection and patient safety, and can be used for human resources development, planning, and counseling. The materials are adaptable for consumer education as well.

In order for the reader to use this material, he needs to know how it was collected and developed, what the tasks cover, how HSMS defines "task," and how to read the task descriptions. This chapter presents such information.

The task descriptions are presented in numerical order by code number in Chapter 3. Chapter 2 is a guide to the tasks. It arranges the abbreviated names of the tasks into two logical breakdowns with code numbers given so the reader can get to the tasks that interest him or her. The groupings in Chapter 2 list the tasks by function, such as patient care, quality assurance, radiation protection, etc., and by type of recipient, such as patient or co-worker.

ABOUT THE TASKS: COLLECTION AND COVERAGE

The HSMS task definition is presented later in this chapter. This section describes how the task descriptions were developed and indicates the coverage in this volume.

Orientation

If one conceives of all the kinds of work that get done in a department in order for it to carry out the function of diagnostic radiology, one might think of a great field or pool of work. Each kind of work is carried out in discrete units. Theoretically, it does not matter how the units are allocated to jobs, as long as all the work is done. In practice, although common sense is usually enough to discern that some tasks require someone trained in radiologic technology or as a radiologist, there are always areas where it is unclear who should do what. This is particularly true in the area of nursing or machine-related functions where state licensure requirements vary; what can be done by a technologist in one state may have to be done by a registered nurse or a credentialed physicist in another state.

The HSMS method avoids this issue until it is clear what the work units _are_. Only at a later stage do we determine the skill and knowledge requirements for work units and their relative levels. The HSMS method begins with descriptions of all the work units, regardless of the job titles in which they are found.[1] We call the work units "tasks."

This volume is the third of three that together present most of the work that is done in a department of Diagnostic Radiology. Since we needed to divide the task descriptions into manageable volumes, we arbitrarily determined that this volume would contain task descriptions of everything that is not clearly medical at the level of the radiologist, or patient examinations at the level of the radiologic technologist, or teaching and evaluating such work. Thus, this volume encompasses the functions of nursing, film processing, machine care, housekeeping, and administration. Some of these tasks can be found in any or all of the job titles found in a radiology department; some can be found elsewhere as well.

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[1] This assignment of work units to jobs varies according to the size of an institution, local practices and laws, relative scarcities of types of manpower, and the extent to which an institution is rationally organized.

Collection of Data

Chapter 3 contains task descriptions. This means that tasks are identified by name, based (in this case) on the HSMS definition of task, and then the steps of the task are described in a logical sequence. They include a good deal of detail.[2]

The work in task identification and description is done in a multi-stage process. HSMS job analysts work in teams. They first determine how many people and what titles they must cover to have access to every kind of work done in the department. This was when we learned that some of the work done by the radiologist, such as removal of sutures, may also be carried out by a nurse; that some nursing work can be carried out by technologists; that electrocardiograms may be monitored by ECG technicians rather than nurses; that sometimes there is a darkroom aide; that the physicist role in diagnostic radiology may also be divided among technologists and consultant physicists. We picked up the work wherever we found it, regardless of title.

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[2] This differentiates the HSMS method from most other task analysis methods which simply identify tasks, usually with a vague definition, and include a very brief name. The HSMS method includes a specific definition of task. Once identified, a task has a code number, an abbreviated name, a summary statement of the task, and a full task description.

With each "performer" interviewed, the analysts first obtain an idea of all the work covered by that individual. The analysts then apply the HSMS definition of task (discussed later in this chapter) to break the work down into specific task units, making sure that nothing is left out. This is the task identification stage. From this point the performers are interviewed and sometimes observed, and the analysts write descriptions of how the tasks are done, including contingencies, alternative approaches and emergencies.

While this is going on, the HSMS Director and the analysts are also reviewing current professional literature in the area. We collected as much material as we could describing the work done in the department, such as articles in professional journals, text books, operators' manuals describing equipment, current state and federal legislation,and proceedings of conferences dealing with safe practice and related issues of patient care. We also had informal talks with professionals, educators,and people in government agencies. An overview emerged as a result concerning procedures and activities which should be presented as tasks or within task descriptions, even if not always represented in current practice. We call these "desiderata." (They are described later in this chapter.)

The task descriptions are first written by the HSMS analysts and then go to the HSMS Director for review and editing. At this stage the tasks are rewritten to incorporate the literature of the field and the desiderata. The task identifications are critically reviewed for conformity to the HSMS definition, and, when necessary, the analysts are sent back to the field to obtain additional information.

The next phase involves critical review by professionals other than the performers who were interviewed by the HSMS analysts. Each of the tasks presented in Chapter 3 has had a minimum of three reviewers; many have been evaluated by five reviewers.

We were very fortunate to obtain the cooperation of supervisory staff in nursing, radiologic technology and radiology at Montefiore Hospital and Medical Center for review purposes, as well as physicians, radiologic technologists, nurses and physicists outside of Montefiore. Some reviewers represent professional organizations or major educational institutions. Staff of the Bureau of Radiological Health, FDA, the American Society of Radiologic Technologists, and the Joint Review Committee on Education in Radiologic Technology have given us the benefit of their expertise, as have educators and equipment manufacturers.[3]

The reviewers are asked to evaluate the tasks for correctness of language and sequence of procedures, to note omission of any tasks in the specialty area, and to indicate acceptable alternative methods. Reviewers are asked to concentrate on how the tasks should be done and also to reflect national practice.

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[3] See the acknowledgements page at the beginning of this volume.

After the tasks are reviewed, the suggested changes are incorporated. Additional tasks are collected and described when necessary, and any new or totally revised tasks are resubmitted for review as described here. When a task has been reviewed and revised as required by at least three reviewers, it is referred to as a "normative task," or an "N task," and is so marked.

Coverage

Most of the tasks in this volume were collected at Montefiore Hospital and Medical Center in New York City over the period August, 1972, to May, 1976. The collection and review of physicist tasks extended through August, 1976.

The reader will note that the collection of task descriptions is not like a sample survey. A sample survey would not cover all the work, but would cover only selected work. A sample would pick up the same work at many locations. We pick up and represent each unit of work only once. The reason is that our objective is to describe all approved work procedures for the purposes of developing instructional materials, curriculum objectives, and career ladders. For such purposes we want, not just the most typical tasks; we want to cover the accepted but rare or difficult procedures, the emergencies, the contingencies, and the best possible practice. We are normative in approach as well as descriptive. We are not dealing with probability theory, which requires sampling of the "universe" being studied. We attempt to present the universe.

This volume includes a body of tasks which describe work with diagnostic x-ray equipment for the purpose of preventive maintenance, quality assurance and radiation protection. Such tasks are now a focus of controversy for at least three reasons. First, there is a good deal of disagreement about which tasks must be done in-house to meet legislative and institutional requirements for safe practice and to provide optimal diagnostic results with minimum radiation exposure to patients and staff. Second, even if the tasks were agreed on, there is no consensus in the field on how the procedures should be carried out and what test equipment should be used. Third, even if the tasks and the methods to carry them out were agreed on, there is no agreement on the job titles to which they should be assigned.

We are in the presence of a typical case of an "emerging occupation." The work of planning programs in quality assurance and radiation protection clearly suggests job titles distinct from the radiologist or the radiologic technologist. But the tasks of carrying out such programs could involve radiologists, radiological technologists and/or completely different titles,depending on the training required, the past training of available staff, the unique needs of the department, and the influence of professional organizations.

The possible titles to which the tasks could be assigned include "health physicist," "medical physicist," "radiation safety officer," "staff physicist," "senior" and/or "junior physicist," "radiologic engineer," "radiological physicist," and even "radiologic technologist."

Many of the tasks in this volume carry out the requirements of Part 1020: Performance Standards for Ionizing Radiation Emitting Products, of Title 21, Food and Drugs; Subchapter J: Radiological Health. This legislation reflects both public and private concern with regard to safe practice in the use of ionizing radiation. While Part 1020 deals with equipment conformance standards, many other tasks and standards also suggest themselves which would translate safety consciousness into work activities.

What we have done in this volume is to completely bypass the issue of assigning tasks to job titles. Instead, we have attempted to identify broad, idealized tasks which cover the planning of an institution's programs in quality assurance and protection, teaching about equipment and protection, providing advice, and evaluating the programs. We also present the tasks that would be generated if the programs were carried out. The task descriptions reflect, in many cases, the options available for carrying out the task objectives.

Our primary sources for the task descriptions were public documents,supplemented by interviews with people in the field. Two documents in particular were extremely useful.[4]

Thus, the area broadly concerned with equipment and safety testing is the most "idealized" of this report, the most open to debate, and not presented as complete. We have done our best to bring as much of the work together as possible; but we recognize the objective limitations of what we present.

We also cover an emergent technology: computerized transverse axial tomography (CTT or CAT or CT scanners). This technology is gaining respect, attention and a proliferation of manufacturers. To make our task descriptions more broadly based than the water-box brain scanner used at Montefiore, we used the literature on this new technology and the manuals for the E.M.I. and Pfizer (A.C.T.A) scanners, to which we were given access, to write general tasks. Our reviewers were asked to evaluate the tasks for their generic usefulness. Thus the tasks should be of use regardless of whether brain scanners or whole body scanners are involved.

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[4] Task Group of the Diagnostic Radiology Committee of the American Association of Physicists in Medicine, Basic Quality Control in Diagnostic Radiology, Task Force on Quality Assurance Protocol (Work in Progress), 1976;and National Evaluation of X-ray Trends Task Force, Suggested Optimum Survey Procedures for Diagnostic X-ray Equipment, Conference of Radiation Control Program Directors and the Bureau of Radiological Health, FDA, DHEW, July, 1975 (DHEW Publication, FDA 76-8014).

In the area of patient care, we include several tasks not usually found in text books related to radiologic technology. These include ECG monitoring in the angiography room, and the application of manual pressure and pressure bandages after the radiologist has completed percutaneous catheterization, and may have applied the initial pressure personally.

DESIDERATA

The practitioner, administrator, or educator reading the HSMS task descriptions will find entire tasks or steps within tasks that are not necessarily found in common practice. We have consciously opted to include tasks, steps, and elements of tasks which represent desiderata, that is, activities that are beneficial to the patient, others on the staff, or the performer. These are included to promote their usage. Some of these are briefly referred to as follows.

We include the tasks of quality assurance and radiation health protection planning, testing, surveying and monitoring because the need to consciously minimize radiation exposure to the population is a primary objective. By listing the tasks of developing quality assurance and radiation protection programs, we pinpoint the need for informed and conscious attention to safe practice at the highest, decision-making levels of the department's functioning. The tasks of carrying out the programs provide a check list for most of the quality and safety activities that seem to be regarded as essential for optimal practice. The tasks cover not only safety checks on the functioning of equipment, but the selection of proper shielding for patient examinations, the safe deployment of staff, and providing for safe installations. Performance of the tasks makes possible a monitoring system that would provide indications of when there may be trouble before patients or staff are exposed to unnecessary radiation.

We also include tasks to ensure that all equipment is cleaned with the proper solutions to prevent contamination and infection of patients and staff.

We include tasks to carry out manual and/or mechanical pressure to puncture sites to prevent hematoma. We include tasks that would require staff to be able to provide emergency care to patients.

We have all performers treat the patient with sympathy and dignity, and provide the patient with information about what is going on or will go on in the procedure.

USES OF THE TASK DESCRIPTIONS

This document is not intended to describe fully how to use these task descriptions. However, we offer a list of possible uses that will be dealt with in subsequent reports:

1. The task descriptions can be used as instructional materials in the classroom and in clinical training. They provide ordered, logical sequences of steps. They suggest what contingencies, options and emergencies are associated with the tasks and, for the less familiar specialities, an indication of what is done in a given procedure.

2. The task descriptions can be used in the development of team training.

3. The task descriptions can provide an introduction to, or a basis for evaluation of, safe practice; they can be used to check on whether desired objectives are being accomplished.

4. The task descriptions, when combined with the HSMS skill and knowledge data, can become inputs in the development of performance-based curriculum objectives and educational ladders.

5. The task descriptions can be used as the basis for evaluation of work performance or as inputs to the development of job relevant proficiency tests (particularly for the selection of test content once the skill and knowledge data are collected).

6. The task descriptions can be used as objective references for the development of job descriptions, especially when edited to reflect the practices at a given institution.

7. The task descriptions can also be used in occupational counseling and for purposes of consumer education and protection.

THE HSMS DEFINITION OF TASK

In the HSMS view, each work activity needed to produce products, such as radiologic medical services, requires manpower which combines existing technology, knowledge, materials, and equipment with skills. The HSMS work unit is the "task." The HSMS definition of task is designed to result in the identification of a unit of work which can be moved from one job to another without disrupting other activities. The task is thus a unit of work which is smaller than a job as a whole, but large enough to have an identifiable, usable output.

The steps of the task, or elements, unlike the task, do not have an identifiable, usable output which can be independently consumed or used, or which can serve as an input in a further stage of production by an individual other than the performer. The HSMS task definition is as follows:

> A task is a series or set of work activities (elements) that are needed to produce an identifiable output that can be independently consumed or used, or that can be used as an input in a further stage of production by an individual who may or may not be the performer of the task.

In order to facilitate use of the definition, HSMS analysts use the following rules:

1. In principle, someone other than the performer of the task must be able to use or consume the output of the task.
2. Theoretically, it should be possible for there to be an elapse of time between tasks.
3. A task includes all the possible conditions or circumstances which a single performer is expected to deal with in connection with the production stage or the output involved.
4. A task includes all the elements that require continuous judgment or assessment by the same performer in order to assure the quality of the output.
5. A task includes all of the elements needed to produce an output which can be independently used or acted upon without special explanations to the next performer in the next stage of production.
6. A task includes all the elements needed to complete an output to a point at which another performer (who would continue with the next production sequence) would not have to redo any elements in order to continue.

7. A task includes all the elements needed to complete an output to a point at which another performer, in order to continue with the next stage of production, need not perform extra steps.

8. The task must not require that, for another performer to continue with the next stage in a production sequence, current institutional arrangements would have to be changed.

9. A task must be sufficiently broad in statement that it can be rated on its frequency of occurrence.

The reader will find that many of the administrative and nursing tasks are generic and can be found in many departments. They have been written intentionally to be picked up and recognized wherever they may appear. A given task that appears in different jobs, departments or institutions is an "overlap" task.

READING THE TASKS

The task descriptions in Chapter 3 follow the format presented in Figure 1, the HSMS Task Description Sheet. At the top right is the task's Code Number. A code number is assigned to the task which uniquely stands for the contents of the task, covering the task's output, what is used, the kind of recipient or respondent dealt with, and how the task is done. Regardless of the job title, institution, or industry in which the task is found, it will always have the same code number. The number itself has no intrinsic meaning.

The basic aspects of the task appear in items 1 through 4 on the left of page 1 of the Task Description Sheet. These help the analysts in the task identification stage and help differentiate one task

Figure 1. HSMS

TASK DESCRIPTION SHEET

Task Code No. _____

This is page 1 of ___ for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

3. Is there a recipient, respondent or co-worker involved in the task? Yes...( ) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

List Elements Fully

6. Check here if this is a master sheet..( )

from another. The term "output" is used to mean the result of an independent stage in a larger process of production in an institution, assuming the current organization of work activities. "What is used" in a task includes all the things which the performer is expected to be able to use or choose from to produce the identified output.

The "recipient, respondent or co-worker" involved in a task reflects the special characteristics or condition of the people with which the performer must be trained to deal. For example, certain procedures are carried out in the same way for all patients. These are "any patient" tasks. In other cases, a procedure is different according to the age level of the patient. We can have a "pediatric task" and a different, "non-pediatric" task related to the same type of examination, and there are thus two tasks. In some cases the task is only applied to a given type of patient,such as an out-patient or one with an infectious condition.

The "name of the task" (item 5 on the Task Description Sheet), summarizes the task in a paragraph-length statement. The underlined portion of the statement is referred to as the "abbreviated task name." The latter is most useful for listings, while the extended name avoids ambiguity when tasks are listed for reference to their contents.

Under the Task Code Number the reader is told the number of pages that the task runs in the statement, "This is page ___ of ___ for this task." All the tasks bear the notation "OK-RP;RR;RR" and are checked as master sheets on the lower right of the first page. This indicates that the task has had the required minimum of three reviewers and is a "normative" task.[5]

The description of how the task is done begins with the column on the right on the first Task Description Sheet and continues for as many pages as necessary on "continuation sheets."

As the work progressed, we developed certain language conventions of which the reader should be aware for ease of comprehension. These are briefly described as follows:

1. The person doing the task is always referred to as the "performer" regardless of his or her usual job title or rank. This provides a standard format and leaves for a later stage any battles over who should do what.

2. The task always begins with an initiating element that indicates how it comes about that the performer is doing the task.

3. The same or similar activities tend to be described with similar language wherever these appear to assist analysts in spotting elements that overlap from task to task. This facilitates curriculum development even if it makes for dull reading.

4. Each task is written so that it is complete within itself. Therefore, there is repetition from task to task for similar procedures.

5. Certain phrases should be interpreted by the reader to indicate that another task has been generated by virtue of this task. Phrases such as "performer arranges...," "performer has...[done]" are examples.

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[5] RP stands for resource person, i.e., the in-house reviewer; RR stands for resource respondent, i.e., outside reviewer. In actual practice, these merely show three reviewers; additional reviewers are not recorded on the sheet.

When a task may either be done by the performer or delegated, a separate task is generated. The signal for such tasks are phrases such as "...or decides to do personally," or "performer plans to...."[6]

6. When a particular part of a task represents an element that may or may not be done depending on institutional practice, personal preference, the state of the art, or the patient's condition, we use the phrase "performer may" or "may" before the description. Where the performer must make a choice as part of the task we have tried to make that explicit: "performer decides," "considers whether."

7. The specific content of some steps in a task, such as sizes or types of materials or contrast media or information evaluated may vary as the state of knowledge in the field changes or new technology develops. There may be variations which reflect the condition of the patient, equipment, institutional facilities, or what was already done. There may also be variation of choices or steps reflecting current controversy or personal preference. We do not attempt to resolve these problems; we simply acknowledge them. Thus, the reader will find the phrase "as appropriate" in many steps. The phrase is used to cover these contingencies. We leave it to the instructor to select what is "true" or "correct" at any point in time.

Note

The reader should be aware that, though the tasks in Chapter 3 are presented in numerical order by code number, not every number is represented. The first code number is Code 8; the last is Code 560. There are only 149 tasks in Chapter 3. The reason is that the code numbers are assigned in sequence as the tasks are processed, and the other tasks appear in other volumes or reports.

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[6] Many tasks in this volume were generated by tasks in Volumes 1 and 2, where a phrase such as those described here indicates that another task is to be carried out by the performer or another staff member.

CHAPTER 2

LISTING OF ABBREVIATED TASK NAMES BY CATEGORY AND CODE NUMBER

TASKS LISTED BY TASK FUNCTION

Category and Abbreviated Task Name	Task Code No.
ADMINISTRATION	
Inventory and Record Keeping	
Ordering duplicate copies of forms, records, or documents.	264
Making photocopies of documents, collating, and stapling.	222
Filling out standard order for linen, picking up, folding and storing.	286
Filling out and delivering standard order for food items for department; picking up, and placing food for storage.	288
Obtaining and checking keypunch control card for serial cassette changer as ordered.	297
Checking for presence of emergency supplies in proper locations.	285
Checking for presence and condition of emergency supplies in proper locations; and restocking as needed.	227
Checking supplies and ordering non-drug materials needed by department.	76
Checking supply and ordering non-narcotic medicinals needed by department.	129
Checking and storing order for non-narcotic drugs and/or supplies.	136

TASKS LISTED BY TASK FUNCTION (continued)

ADMINISTRATION

Inventory and Record Keeping (continued)

Category and Abbreviated Task Name	Task Code No.
Checking supply of narcotics or regulated drugs (or witnessing count); reordering, picking up, and restocking.	128
Filling out patient identification information on labels and forms in anticipation of need or as requested.	164
Filling out institutional report form (such as for cancellation) as ordered by MD.	163
Logging and/or tallying patient services and/or instructional case record materials for use in record keeping, billing or instruction.	134
Checking and jacketing patient's radiographs, ultrasonograms, and/or C.T.T. scans with requisition sheets and prior diagnostic materials and placing for filing or interpreting.	78
Obtaining patient records for use in examination, procedure, treatment or conference.	354
Checking and submitting accumulated patients' treatment and medication check lists for in and out time stamps.	300
Checking in-patients' identity against patients' treatment and medication check lists; stamping arrival and departure times; attaching cards to patients indicating special conditions.	281

Arranging Patient and Work Flows

Category and Abbreviated Task Name	Task Code No.
Making assignments of staff to work areas, procedures, and/or MD's and/or vacations and lunch hours.	131
Preparing and adjusting schedules for patient procedures.	272

TASKS LISTED BY TASK FUNCTION (continued)

Category and Abbreviated Task Name	Task Code No.
ADMINISTRATION	
Arranging Patient and Work Flows (continued)	
Assigning scheduled patients to procedure rooms in appropriate order.	277
Notifying ward or floor personnel to ready and transport in-patients who are scheduled for specific procedures at specific times.	279
Assigning subordinate and explaining assignment to transport patient, obtain materials or documents, or assist co-worker.	294
Checking on reasons for nonappearance of in-patients for examinations or treatment.	278
Requesting repair, replacement or other services of another hospital department orally and/or filling out requisition.	132
Personnel Matters	
Orienting new staff member(s) to departmental standard operating and administrative procedures, floor plan, location of equipment and supplies, record keeping.	186
Keeping attendance records and recording or reporting excessive lateness and/or absenteeism.	165
Formally evaluating subordinates' work by filling out descriptive and/or rating-scale evaluation forms.	306
Conducting a private personnel meeting with subordinate.	307
Attending personal meeting with supervisor on functioning or personal, work-related problems.	293
Calling and participating as supervisor in meeting of subordinates in department.	309

TASKS LISTED BY TASK FUNCTION (continued)

Category and Abbreviated Task Name	Task Code No.
MEDICAL MATERIALS HANDLING	
Preparing Medical Materials	
Checking presence and functioning of oxygen and/or suction equipment, and amounts of oxygen.	284
Relocking equipment box(es) with breakaway lock.	184
Adding predetermined instruments and supplies to prepared procedure trays.	274
Preparing a hypodermic needle with injection dosage on orders.	260
Preparing materials or trays with medications and materials for special treatments or procedures according to standard orders.	80
Readying emergency cart.	304
Preparing barium sulfate contrast medium as ordered or for standard use.	79
Dealing With Specimens	
Preparing blood samples for the laboratory.	180
Preparing specimens such as extravascular body fluids, washings, cell and/or tissue biopsies for transportation to laboratory.	65
Delivering prepared specimens or cultures to lab or incubator.	137
Testing a urine sample by tablet or dipstick method and recording.	95
Housekeeping	
Making up unoccupied bed or stretcher bed.	223

TASKS LISTED BY TASK FUNCTION (continued)

Category and Abbreviated Task Name	Task Code No.
MEDICAL MATERIALS HANDLING	
Housekeeping (continued)	
Cleaning an examination or treatment room after use.	135
Preparing treatment or examination equipment for sterilization in autoclave.	145
Using isolation and decontamination techniques to prepare examination or treatment room or area and clean up afterwards for patient with infectious or communicable condition.	166
PATIENT CARE	
General Care	
Giving any patient general reassurance.	113
Reassuring any patient and/or accompanying adult about x-ray and/or fluoroscopy procedures.	73
Placing or making call and delivering non-medical message at patient's or co-worker's request.	302
Explaining to any out-patient or accompanying adult proper at-home procedures to follow prior to coming for radiographic or fluoroscopic examination.	74
Escorting adult out-patients to and/or from dressing rooms, treatment rooms and/or waiting areas.	282
Assisting patient to or from wheelchair, stretcher, bed, or table and/or transporting patient to designated area.	190
On orders, placing order for specific dietetic meal; picking up, delivering, and feeding patient if so decided.	287
Bottle feeding a baby with pre-prepared formula.	289

Category and Abbreviated Task Name	Task Code No.
PATIENT CARE	
General Care (continued)	
Diapering a baby.	301
Mummying or wrapping an infant or young pediatric patient.	490
Restraining any patient.	243
Having any patient and materials prepared for special procedure and readying patient for examination.	193
Reporting observed symptoms and concerns of any patient to physician or staff member.	138
Assisting physician or co-worker in special examination or treatment procedures.	153
Monitoring-type Procedures	
Taking and reporting temperature of any non-pediatric patient with oral thermometer on orders.	291
Taking and recording vital signs (temperature, pulse, respiration and blood pressure) of any patient.	199
Arranging, measuring and recording food intake and excretory output as ordered.	303
Obtaining and examining fresh stool from any patient and reporting unusual or suspicious appearance, on orders.	292
Obtaining urine specimen on orders.	155
Obtaining a clean catch urine specimen from any patient and preparing for laboratory.	98
Preparing any patient and attaching electrodes for electrocardiogram monitoring.	520

Category and Abbreviated Task Name	Task Code No.
PATIENT CARE	
Monitoring-type Procedures (continued)	
Setting up and monitoring any patient's electrocardiogram during special procedure.	308
Taking an electrocardiogram of any patient as ordered or determined.	262
Deciding whether to call staff person to evaluate whether unusual EKG reading is artifact, or calling physician in case of serious patient distress.	271
Introductory Procedures and First Aid	
Changing any patient's colostomy bag on orders.	290
Catheterizing any female urethra as ordered.	143
Catheterizing any male or female patient's urethra with retention balloon catheter.	181
On orders deciding whether wound of any patient needing change of dressing needs attention of RN; changing simple dry dressing or reinforcing wet dressing.	283
Irrigating, cleaning, dressing or redressing any patient's wound, burn or opening for catheter as ordered.	156
Applying digital or manual pressure to any patient's arterial or venous puncture site as ordered.	521
Applying pressure dressing to arterial or venous puncture site as ordered.	522
Removing any patient's sutures.	33
Setting up and using suction machine to clear airway or to assist with gastric lavage.	182

TASKS LISTED BY TASK FUNCTION (continued)

Category and Abbreviated Task Name	Task Code No.
PATIENT CARE	
Introductory Procedures and First Aid (continued)	
Administering medication orally to any patient according to MD's orders after having quantity checked.	198
Administering medication orally to any patient according to MD's orders.	298
Administering subcutaneous or intramuscular injection for any patient according to MD's orders after having quantity checked.	133
Administering subcutaneous or intramuscular injection for any patient according to MD's orders.	299
Drawing blood from any non-pediatric patient's vein on orders.	18
Administering test for allergy to iodine based contrast medium of any patient.	19
Providing emergency care for any patient having adverse reaction to radiographic contrast medium, procedure, or accident.	77
Providing first aid in x-ray department emergency.	296
Administering oxygen from portable or piped outlet unit using oronasal or nasal mask according to MD's orders.	185
Evaluating, Teaching, Meeting	
Informally observing and evaluating patient care work of nursing and technologist staff in diagnostic radiography, and deciding whether training is needed.	158
Providing informal clinical training in patient care for non-MD personnel in diagnostic radiography.	305
Participating in meeting of nursing personnel in x-ray department.	295

TASKS LISTED BY TASK FUNCTION (continued)

QUALITY ASSURANCE, RADIATION PROTECTION, EQUIPMENT-RELATED

Processing

Category and Abbreviated Task Name	Task Code No.
Designing, maintaining, evaluating darkroom and/or film processor monitoring program in diagnostic radiology.	542
Determining exposure characteristics of x-ray and/or dosimetric films.	544
Preparing radiographic subtraction prints.	275
Applying print coater to photographs.	319
Cleaning, inspecting and readying automatic x-ray film processor(s) for use.	273
Processing exposed x-ray film in automatic processor.	69
Inspecting, cleaning and readying x-ray film hand processing equipment for use.	70
Processing exposed x-ray film manually.	71
Processing exposed Polaroid x-ray film with Polaroid automatic processing equipment.	267
Monitoring and evaluating x-ray film processors.	543
Making minor adjustments or repair on automatic x-ray film processor.	276
Inspecting and cleaning intensifying screens in cassette holders.	167
Loading x-ray film cassette(s), nonscreen film holder(s), box(es), and/or roll film cartridges.	72
Checking cassettes for proper film-screen contact.	187
Loading empty cassette with Poloroid x-ray film.	269
Retrieving, displaying and making photographs, printouts and/or magnetic tape records of computerized transverse axial tomographic (C.T.T.) scans.	527

TASKS LISTED BY TASK FUNCTION (continued)

Category and Abbreviated Task Name	Task Code No.
QUALITY ASSURANCE, RADIATION PROTECTION, EQUIPMENT-RELATED	
Readying, Maintaining X-Ray Equipment	
Inspecting, checking, preparing xeroradiography equipment for use.	192
Checking, preparing fluoroscope controls (and phototimer).	178
Providing visual and/or manual inspection of diagnostic radiography system.	536
Preparing computerized transverse axial tomography (C.T.T.) equipment for use.	523
Shutting down computerized transverse axial scanning equipment.	8
Providing preventive maintenance for display tube surface, camera, disc and/or tape drive units, and/or scanning assembly (especially water-using head box assembly) of computerized transverse axial tomography (C.T.T.) equipment.	524
Providing visual and radiographic or fluoroscopic inspection of personnel shielding devices such as leaded gloves, aprons, sheets, gonadal shields.	534
Equipment Testing, Calibration	
Designing, maintaining, evaluating calibration and/or dose monitoring program in diagnostic radiology.	528
Calibrating diagnostic x-ray test, survey, or measuring instruments.	556
Checking x-ray field limitation, x-ray receptor and light field alignment, minimum TOD, TFD and field size indicators for diagnostic x-ray equipment.	529
Checking fluoroscopic and spot film x-ray field limitation, x-ray field and image receptor alignment, maximum TID, minimum TOD, and other requirements.	530
Testing whether diagnostic x-ray tube overload protection and/or effective focal spot size meet acceptable standards.	531

QUALITY ASSURANCE, RADIATION PROTECTION, EQUIPMENT-RELATED

Equipment Testing, Calibration (continued)

Category and Abbreviated Task Name	Task Code No.
Checking and/or performing direct calibration tests of diagnostic radiography equipment exposure timers.	532
Checking accuracy of x-ray machine timers (except phototimers) with spinning top test.	173
Checking automatic exposure termination of diagnostic radiography equipment.	533
Checking calibration and accuracy of C.T.T. equipment by making test scans.	525
Performing calibration tests of kVp, mA, mAs, exposure rates, reproducibility on diagnostic radiography equipment using direct measuring instruments and/or radiographic comparisons.	535
Performing penetrometer calibration test of kVp or mA selectors of x-ray machine output.	175
Ordering or approving changes in technical factor selector settings to compensate for a change in quality of x-ray machine output.	439
Preparing or changing technique charts for specific x-ray and fluoroscopic equipment on orders.	147
Checking fluoroscopic automatic brightness control system and/or focus, resolution and distortion of the optical system.	540
Checking diagnostic tomography x-ray equipment for mechanical operation, fulcrum position, resolution, exposure uniformity and/or grid alignment.	537
Estimating HVL and checking adequacy of filtration of diagnostic x-ray equipment.	538
Checking bucky grid alignment and/or centering in diagnostic radiography equipment.	539

TASKS LISTED BY TASK FUNCTION (continued)

Category and Abbreviated Task Name	Task Code No.
QUALITY ASSURANCE, RADIATION PROTECTION, EQUIPMENT-RELATED	
Radiation Protection, Monitoring	
Designing, maintaining, evaluating radiation protection and monitoring programs in diagnostic radiology.	546
Evaluating accepted and rejected radiographs to identify any technical problems with staff functioning, equipment, radiation protection.	541
Determining primary and secondary structural shielding required for diagnostic x-ray installations.	547
Collecting and presenting technical information about, and/or recommending new diagnostic x-ray equipment.	557
Checking the leakage radiation rate from the source assembly of diagnostic x-ray equipment.	549
Checking maximum entrance exposure rate and primary barrier transmitted radiation rate for fluoroscopic equipment.	548
Monitoring patient exposure rates for routine diagnostic x-ray procedures.	545
Conducting protection survey of stray radiation within diagnostic x-ray installation and transmission across primary and secondary protective barriers.	550
Preparing personnel radiation monitoring dosimetric film or TLD badges and distributing.	551
Participating in monitoring of personal exposure to radiation by periodically turning in and replacing film strip in badge worn by performer.	280
Participating in monitoring of personal exposure to radiation by periodically turning in and replacing film strip in badge; evaluating posted exposure listings.	327

TASKS LISTED BY TASK FUNCTION (continued)

Category and Abbreviated Task Name	Task Code No.
QUALITY ASSURANCE, RADIATION PROTECTION, EQUIPMENT-RELATED	
Radiation Protection, Monitoring (continued)	
Collecting and/or distributing personnel monitoring dosimetric badge inserts and preparing for outside or in-house processing and reading.	552
Reading and recording exposure from personnel monitoring film or thermoluminescent dosimeters.	553
Entering, evaluating occupational radiation exposure data and initiating action on dangerous levels.	554
Investigating reasons for reported high occupational radiation exposure and initiating remediation.	555
Teaching, Meeting	
Providing clinical training for staff in a diagnostic radiology department in quality assurance tests of equipment, in radiation protection procedures, and related maintenance.	558
Planning and presenting lectures and/or related laboratory sessions on radiation and/or health physics for students in professional programs for diagnostic radiology, in medical school, or in medical sciences.	559
Preparing lectures or participating in meetings of staff members in diagnostic radiology on radiation protection and quality assurance requirements and practices.	560

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER

Category and Abbreviated Task Name	Task Code No.
TASKS WITH PATIENT RECIPIENT	
Any Patient	
Checking in-patients' identity against patients' treatment and medication check lists; stamping arrival and departure times; attaching cards to patients indicating special conditions.	281
Giving any patient general reassurance.	113
Reassuring any patient and/or accompanying adult about x-ray and/or fluoroscopy procedures.	73
Explaining to any out-patient or accompanying adult proper at-home procedures to follow prior to coming for radiographic or fluoroscopic examination.	74
Placing or making call and delivering non-medical message at patient's or co-worker's request.	302
Assisting patient to or from wheelchair, stretcher, bed, or table and/or transporting patient to designated area.	190
Having any patient and materials prepared for special procedure and readying patient for examination.	193
Reporting observed symptoms and concerns of any patient to physician or staff member.	138
Restraining any patient.	243
On orders, placing order for specific dietetic meal; picking up, delivering, and feeding patient if so decided.	287
Arranging, measuring and recording food intake and excretory output as ordered.	303
Obtaining and examining fresh stool from any patient and reporting unusual or suspicious appearance, on orders.	292
Preparing any patient and attaching electrodes for electrocardiogram monitoring.	520

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH PATIENT RECIPIENT	
Any Patient (continued)	
Setting up and monitoring any patient's electrocardiogram during special procedure.	308
Taking an electrocardiogram of any patient as ordered or determined.	262
Deciding whether to call staff person to evaluate whether unusual EKG reading is artifact, or calling physician in case of serious patient distress.	271
Changing any patient's colostomy bag on orders.	290
Obtaining urine specimen on orders.	155
Obtaining a clean catch urine specimen from any patient and preparing for laboratory.	98
Catheterizing any male or female patient's urethra with retention balloon catheter.	181
Taking and recording vital signs (temperature, pulse, respiration and blood pressure) of any patient.	199
Administering medication orally to any patient according to MD's orders after having quantity checked.	198
Administering medication orally to any patient according to MD's orders.	298
Applying digital or manual pressure to any patient's arterial or venous puncture site as ordered.	521
Applying pressure dressing to arterial or venous puncture site as ordered.	522
On orders deciding whether wound of any patient needing change of dressing needs attention of RN; changing simple dry dressing or reinforcing wet dressing.	283

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH PATIENT RECIPIENT	
Any Patient (continued)	
Irrigating, cleaning, dressing or redressing any patient's wound, burn or opening for catheter as ordered.	156
Removing any patient's sutures.	33
Administering subcutaneous or intramuscular injection for any patient according to MD's orders after having quantity checked.	133
Administering subcutaneous or intramuscular injection for any patient according to MD's orders.	299
Administering test for allergy to iodine based contrast medium of any patient.	19
Setting up and using suction machine to clear airway or to assist with gastric lavage.	182
Administering oxygen from portable or piped outlet unit using oronasal or nasal mask according to MD's orders.	185
Providing first aid in x-ray department emergency.	296
Providing emergency care for any patient having adverse reaction to radiographic contrast medium, procedure, or accident.	77
Pediatric Patient	
Bottle feeding a baby with pre-prepared formula.	289
Diapering a baby.	301
Mummying or wrapping an infant or young pediatric patient.	490

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH PATIENT RECIPIENT	
Non-Pediatric Patient	
Escorting adult out-patients to and/or from dressing rooms, treatment rooms and/or waiting areas.	282
Taking and reporting temperature of any non-pediatric patient with oral thermometer on orders.	291
Catheterizing any female urethra as ordered.	143
Drawing blood from any non-pediatric patient's vein on orders.	18
TASKS WITH STUDENT OR STAFF RECIPIENT	
Providing informal clinical training in patient care for non-MD personnel in diagnostic radiography.	305
Providing clinical training for staff in a diagnostic radiology department in quality assurance tests of equipment, in radiation protection procedures, and related maintenance.	558
Planning and presenting lectures and/or related laboratory sessions on radiation and/or health physics for students in professional programs for diagnostic radiology, in medical school, or in medical sciences.	559
Preparing lectures or participating in meetings of staff members in diagnostic radiology on radiation protection and quality assurance requirements and practices.	560
TASKS WITH CO-WORKER	
Obtaining patient records for use in examination, procedure, treatment or conference.	354
Notifying ward or floor personnel to ready and transport in-patients who are scheduled for specific procedures at specific times.	279

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH CO-WORKER (continued)	
Delivering prepared specimens or cultures to lab or incubator.	137
Checking and submitting accumulated patients' treatment and medication check lists for in and out time stamps.	300
Checking supply of narcotics or regulated drugs (or witnessing count); reordering, picking up, and restocking.	128
Preparing and adjusting schedules for patient procedures.	272
Checking on reasons for nonappearance of in-patients for examinations or treatment.	278
Using isolation and decontamination techniques to prepare examination or treatment room or area and clean up afterwards for patient with infectious or communicable condition.	166
Preparing personnel radiation monitoring dosimetric film or TLD badges and distributing.	551
Collecting and/or distributing personnel monitoring dosimetric badge inserts and preparing for outside or in-house processing and reading.	552
Participating in monitoring of personal exposure to radiation by periodically turning in and replacing film strip in badge worn by performer.	280
Participating in monitoring of personal exposure to radiation by periodically turning in and replacing film strip in badge; evaluating posted exposure listings.	327
Entering, evaluating occupational radiation exposure data and initiating action on dangerous levels.	554
Investigating reasons for reported high occupational radiation exposure and initiating remediation.	555
Determining primary and secondary structural shielding required for diagnostic x-ray installations.	547

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH CO-WORKER (continued)	
Designing, maintaining, evaluating calibration and/or dose monitoring program in diagnostic radiology.	528
Designing, maintaining, evaluating darkroom and/or film processor monitoring program in diagnostic radiology.	542
Designing, maintaining, evaluating radiation protection and monitoring programs in diagnostic radiology.	546
Evaluating accepted and rejected radiographs to identify any technical problems with staff functioning, equipment, radiation protection.	541
Collecting and presenting technical information about and/or recommending new diagnostic x-ray equipment.	557
Participating in meeting of nursing personnel in x-ray department.	295
TASKS WITH SUBORDINATE	
Ordering or approving changes in technical factor selector settings to compensate for a change in quality of x-ray machine output.	439
Orienting new staff member(s) to departmental standard operating and administrative procedures, floor plan, location of equipment and supplies, record keeping.	186
Making assignments of staff to work areas, procedures, and/or MD's and/or vacations and lunch hours.	131
Assigning subordinate and explaining assignment to transport patient, obtain materials or documents, or assist co-worker.	294
Keeping attendance records and recording or reporting excessive lateness and/or absenteeism.	165

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH SUBORDINATE (continued)	
Informally observing and evaluating patient care work of nursing and technologist staff in diagnostic radiography, and deciding whether training is needed.	158
Formally evaluating subordinates' work by filling out descriptive and/or rating-scale evaluation forms.	306
Conducting a private personnel meeting with subordinate.	307
Calling and participating as supervisor in meeting of subordinates in department.	309
TASKS WITH SUPERVISORY PERSON	
Filling out institutional report form (such as for cancellation) as ordered by MD.	163
Assisting physician or co-worker in special examination or treatment procedures.	153
Retrieving, displaying and making photographs, printouts and/or magnetic tape records of computerized transverse axial tomographic (C.T.T.) scans.	527
Attending personal meeting with supervisor on functioning or personal, work-related problems.	293
TASKS WITH SERVICE PERSONNEL	
Requesting repair, replacement or other services of another hospital department orally and/or filling out requisition.	132
Calibrating diagnostic x-ray test, survey, or measuring instruments.	556

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH SERVICE PERSONNEL (continued)	
Providing visual and radiographic or fluoroscopic inspection of personnel shielding devices such as leaded gloves, aprons, sheets, gonadal shields.	534
Checking cassettes for proper film-screen contact.	187
Inspecting, checking, preparing xeroradiography equipment for use.	192
Providing visual and/or manual inspection of diagnostic radiography system.	536
Checking, preparing fluoroscope controls (and phototimer).	178
Checking diagnostic tomography x-ray equipment for mechanical operation, fulcrum position, resolution, exposure uniformity and/or grid alignment.	537
Checking fluoroscopic automatic brightness control system and/or focus, resolution and distortion of the optical system.	540
Checking and/or performing direct calibration tests of diagnostic radiography equipment exposure timers.	532
Checking accuracy of x-ray machine timers (except phototimers) with spinning top test.	173
Checking automatic exposure termination of diagnostic radiography equipment.	533
Performing calibration tests of kVp, mA, mAs, exposure rates, reproducibility on diagnostic radiography equipment using direct measuring instruments and/or radiographic comparisons.	535
Performing penetrometer calibration test of kVp or mA selectors of x-ray machine output.	175
Checking x-ray field limitation, x-ray receptor and light field alignment, minimum TOD, TFD and field size indicators for diagnostic x-ray equipment.	529

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH SERVICE PERSONNEL (continued)	
Checking fluoroscopic and spot film x-ray field limitation, x-ray field and image receptor alignment, maximum TID, minimum TOD, and other requirements.	530
Testing whether diagnostic x-ray tube overload protection and/or effective focal spot size meet acceptable standards.	531
Estimating HVL and checking adequacy of filtration of diagnostic x-ray equipment.	538
Checking bucky grid alignment and/or centering in diagnostic radiography equipment.	539
Monitoring and evaluating x-ray film processors.	543
Making minor adjustments or repair on automatic x-ray film processor.	276
Checking the leakage radiation rate from the source assembly of diagnostic x-ray equipment.	549
Checking maximum entrance exposure rate and primary barrier transmitted radiation rate for fluoroscopic equipment.	548
Conducting protection survey of stray radiation within diagnostic x-ray installation and transmission across primary and secondary protective barriers.	550
Monitoring patient exposure rates for routine diagnostic x-ray procedures.	545
TASKS WITH PICK-UP OR DELIVERY CONTACT	
Filling out standard order for linen, picking up, folding and storing.	286
Filling out and delivering standard order for food items for department; picking up, and placing food for storage.	288

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH PICK-UP OR DELIVERY CONTACT (continued)	
Obtaining and checking keypunch control card for serial cassette changer as ordered.	297
Checking for presence and condition of emergency supplies in proper locations; and restocking as needed.	227
Checking supplies and ordering non-drug materials needed by department.	76
Checking supply and ordering non-narcotic medicinals needed by department.	129
Checking and storing order for non-narcotic drugs and/or supplies.	136
Loading empty cassette with Polaroid x-ray film.	269
Loading x-ray film cassette(s), nonscreen film holder(s), box(es), and/or roll film cartridges.	72
Processing exposed Polaroid x-ray film with Polaroid automatic processing equipment.	267
Processing exposed x-ray film in automatic processor.	69
Processing exposed x-ray film manually.	71
Preparing radiographic subtraction prints.	275
Applying print coater to photographs.	319
Determining exposure characteristics of x-ray and/or dosimetric films.	544
Filling out patient identification information on labels and forms in anticipation of need or as requested.	164
Assigning scheduled patients to procedure rooms in appropriate order.	277

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

TASKS WITH PICK-UP OR DELIVERY CONTACT (continued)

Category and Abbreviated Task Name	Task Code No.
Checking and jacketing patient's radiographs, ultrasonograms, and/or C.T.T. scans with requisition sheets and prior diagnostic materials and placing for filing or interpreting.	78
Logging and/or tallying patient services and/or instructional case record materials for use in record keeping, billing or instruction.	134
Preparing treatment or examination equipment for sterilization in autoclave.	145
Preparing barium sulfate contrast medium as ordered or for standard use.	79
Preparing a hypodermic needle with injection dosage on orders.	260
Adding predetermined instruments and supplies to prepared procedure trays.	274
Preparing materials or trays with medications and materials for special treatments or procedures according to standard orders.	80
Readying emergency cart.	304
Preparing blood samples for the laboratory.	180
Preparing specimens such as extravascular body fluids, washings, cell and/or tissue biopsies for transportation to laboratory.	65

TASKS WITH LITTLE OR NO CONTACT

Category and Abbreviated Task Name	Task Code No.
Testing a urine sample by tablet or dipstick method and recording.	95
Ordering duplicate copies of forms, records, or documents.	264

TASKS LISTED BY TYPE OF MAIN RECIPIENT, RESPONDENT OR CO-WORKER (continued)

Category and Abbreviated Task Name	Task Code No.
TASKS WITH LITTLE OR NO CONTACT (continued)	
Making photocopies of documents, collating, and stapling.	222
Checking for presence of emergency supplies in proper locations.	285
Checking presence and functioning of oxygen and/or suction equipment, and amounts of oxygen.	284
Relocking equipment box(es) with breakaway lock.	184
Preparing computerized transverse axial tomography (C.T.T.) equipment for use.	523
Providing preventive maintenance for display tube surface, camera, disc and/or tape drive units, and/or scanning assembly (especially water-using head box assembly) of computerized transverse axial tomography (C.T.T.) equipment.	524
Checking calibration and accuracy of C.T.T. equipment by making test scans.	525
Shutting down computerized transverse axial scanning equipment.	8
Inspecting and cleaning intensifying screens in cassette holders.	167
Cleaning an examination or treatment room after use.	135
Inspecting, cleaning and readying x-ray film hand processing equipment for use.	70
Cleaning, inspecting and readying automatic x-ray film processor(s) for use.	273
Making up unoccupied bed or stretcher bed.	223
Preparing or changing technique charts for specific x-ray and fluoroscopic equipment on orders.	147
Reading and recording exposure from personnel monitoring film or thermoluminescent dosimeters.	553

CHAPTER 3

TASK DESCRIPTIONS:

MACHINE-RELATED, PATIENT CARE AND ADMINISTRATIVE TASKS

There are 149 tasks included in this chapter. These are arranged numerically by Task Code Number from Code 8 to Code 560. Not all numbers are represented in this volume.

There is no chapter pagination. Instead, the pages within each task are numbered. The user can find the task by referring to the Task Code Number and task page number at the upper right of each page.

Some tasks have a notation at the bottom of the first sheet which states, "This is a new assignment to this number." This indicates that an earlier use was made of the number, and the earlier assignment is now obsolete. All other code numbers up to Code 273 in this volume are tasks that were also found by HSMS in an ambulatory care center where a pilot test of the HSMS method was carried out.

TASK DESCRIPTION SHEET

Task Code No. 8

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

C.T.T. equipment shut down and turned off after allowing x-ray tube to cool; problems reported or decision made to report to service organization, or have equipment tested.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

C.T.T. unit, control panels, switches; keyswitch; operator's manual; magnetic discs, tapes or cassettes; tape or disc storage files; protective case

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor or co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Shutting down computerized transverse axial scanning equipment, by turning off x-ray unit; unloading magnetic tape or disc, and storing; waiting for x-ray tubes to cool and shutting appropriate units; turning off heat exchanger; reporting any problems or deciding to have tests made.

List Elements Fully

Performer turns off computerized transverse axial tomography (C.T.T.) equipment at end of day or shift, or if there is a problem, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do personally.

C.T.T. equipment may include E.M.I. or A.C.T.A. scanner, or similar type, depending on institution; may be referred to as C.T.T., C.T., or C.A.T. scanner.

1. Unless automatically arranged, performer plans equipment shutdown so that the heat exchanger is left on for at least five minutes after the last scan done before turn-off, so that the x-ray tube can be cooled by oil in the cooling system.

2. If the C.T.T. scanner involved has a water filled head box for brain scanning, performer operates controls to rotate water box so that water valve is at the top and headbag is extended so that air bubbles will rise.

3. Performer shuts down after appropriate lapse of time after last scan:

   a. Uses controls to turn off x-ray control unit, high voltage and photomultipliers as appropriate.

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6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 8

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
Checks that ready light(s) go off. b. Unloads any disc and/or tape in unit: i) May reset and rewind magnetic tape using appropriate controls. ii) When tape drive has stopped, completes rewind operation. iii) Removes tape reel or disc from unit. Closes unit door. iv) May place tape or disc in protective case. v) Stores tape or disc as appropriate according to file system, or places in appropriate location for later filing. c. Checks that visual displays are turned off. (May leave power on.) d. Depending on equipment, turns off appropriate switches, motor drives, keyswitch, except for those kept in "on" position. Checks that appropriate lights go off. e. Unless provided for automatically, performer turns off the heat exchanger after checking proper time elapse (at least five minutes after last scan). f. Turns off any other controls as appropriate, and checks that all lights are off. g. May check operator's manual if there is a problem; may report any problems to appropriate staff member; may decide to call service organization or have test runs made, or decides to test personally.	

TASK DESCRIPTION SHEET

Task Code No. 18

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Blood drawn from patient's vein for blood work up; vacutainers or test tubes filled with blood; containers labeled; inability to find vein reported; record entered; arrangement made for samples to be prepared and taken to laboratory.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's chart, check list, or MD's orders; telephone; tray with tourniquet, marking pencil, alcohol swabs, sterile needle, sterile vacutainers or syringes and sterile test tubes; anti-coagulants; bandaids; labels, lab slips; iced container

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any non-pediatric patient; co-worker; MD or supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Drawing blood from any non-pediatric patient's vein on orders by determining amount needed for tests ordered; finding vein, inserting needle and drawing proper amount of blood into syringes or vacutainers; reporting inability to find vein; arranging to have specimens prepared and sent to lab; recording.

List Elements Fully

Performer draws blood from non-pediatric patient's vein:

a. On orders.
b. As regular part of examination procedure.
c. At request of co-worker.

1. Performer reviews MD's orders, has standard order such as on check list, or listens to specific request for blood for tests and/or special labeling.

   Performer consults check list to determine for any test to be done the amount of blood, whether an anti-coagulant is needed and/or the color of the vacutainer. May call lab if check list is not available.

2. Has lab slips, labels and materials prepared for tests by subordinates, or decides to prepare personally, including syringes and test tubes or vacutainers, needles, anti-coagulants, iced container.

3. Labels blood sample containers, making sure that lab slips are properly filled out. May mark date, time, and specific location from which blood is to be taken.

4. Explains to patient what will be done. Selects arm and vein from which to draw blood, depending on visibility of blood vessels.

5. If performer is unable to obtain sample because of diffi-

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 18

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
culty in finding vein, reports this to supervisor or physician. 6. Applies tourniquet to inflate vein, instructing patient to make a fist. 7. Locates and may mark point for insertion; swabs with alcohol. Checks needle. Ejects air equal to amount of blood to be drawn. Inserts needle; checks for blood by pulling back slightly on plunger. Draws blood into appropriately labeled vacutainer(s) or syringe(s) in amount specified for tests. Removes tourniquet and then needle. 8. Gives vacutainer(s) or syringe(s) to co-worker to prepare for lab, or decides to do personally. 9. Swabs puncture with alcohol swab; compresses area; may put on bandaid.	

TASK DESCRIPTION SHEET

Task Code No. 19

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Decision on whether to go ahead with test for allergy to iodine based contrast medium; test dose injected; patient's reaction evaluated; treatment and/or emergency care administered and patient hospitalized if necessary; full dose of contrast solution injected if so requested; standby care provided if appropriate; record made of patient's reaction to test.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Requisition form and patient's chart; prepared procedure tray with syringes and materials needed for test dose (and full dose) of iodine based contrast solution; cortico-steroid, antihistamine or atropine; materials and equipment on emergency cart; telephone; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to have test for allergy to iodine based contrast medium; radiologic technologist; nursing and/or clerical personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Administering test for allergy to iodine based contrast medium of any patient by deciding whether to go ahead based on case history and interview; injecting test dose intravenously and noting reaction; providing emergency care and/or care to control adverse reaction; deciding whether patient can tolerate full dose; informing patient of allergy; if requested and decided, administering full dose and/or recording reaction; telling technologist when to go ahead if appropriate; providing standby care if appropriate; recording results.

List Elements Fully

Performer may be asked or be assigned to administer a test for allergy to iodine based contrast media (used in radiographic contrast studies) and may administer the contrast dosage if so requested, once having made the judgment that no adverse reaction has occurred.

1. Performer reads the appropriate requisition form and medical information to become familiar with the case. Notes any relevant information.

   Checks to see that patient or authorized adult has signed consent for procedure. If not, informs appropriate co-worker and either terminates test or has it delayed until written consent is obtained.

2. Performer greets patient and/or accompanying adult in examination room. Attempts to reassure; explains what will be done. Performer may question patient or adult about symptoms in relation to the condition being studied. May collect additional medical history regarding allergies (especially to iodine and seafood), respiratory problems or asthma. Answers questions about test.

3. Performer decides whether to proceed with the test based on assessment of patient's current condition or evidence of allergy to contrast medium.

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6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 19

This is page 2 of 3 for this task.

List Elements Fully

4. If performer decides not to proceed, records reasons on patient's chart and any recommendations such as rescheduling. Informs appropriate co-worker.

5. If performer decides to proceed, indicates to appropriate staff person that decision has been made to proceed with the test dose of the contrast medium.

   a. Performer has patient prepared for intravenous injection of test dosage and checks that procedure tray and emergency cart are present and properly equipped.
   b. Performer may prepare patient personally by exposing arm, applying tourniquet, finding vein and swabbing site with antiseptic solution, or has this done.

6. Performer asks for or selects prepared test dose of radiopaque iodine based contrast solution in hypodermic. If using separate syringe for test dose, checks for proper amount (1 or 2 cc); otherwise checks for amount needed for test and full dose. Expels air in syringe; inserts needle into vein; removes tourniquet and injects test dose. If using separate syringe for test, removes needle and swabs site. If using same syringe for full dose, leaves in place.

7. Performer observes patient's reactions to test dose for several minutes and decides whether patient can tolerate full dose and whether to proceed with full dosage of contrast solution (if so requested).

8. If patient has a severe reaction to the test dose, such as cardiac arrest, anaphylactic shock (exaggerated negative reaction to the foreign substance), bronchospasm or laryngospasm (stricture of bronchial tubes or larynx), hypotension (drop in blood pressure), cyanosis (bluish discoloration due to excessive concentration of reduced hemoglobin in blood), urticaria (vascular skin reaction), or violent sneezing, performer orders emergency cart and proceeds at once with emergency life support or measures to control the reaction:

   a. Performer determines the severity of the condition by listening for heartbeat, respiration; may check blood pressure: may take EKG reading, using equipment on emergency cart. Performer handles emergency:

      i) May administer oxygen or air using oxygen tank and mask or ambu bag; may clear airway using finger or tongue blade.
      ii) May decide to establish an airway by removing any dentures and, using a laryngoscope (to view larynx), inserting an endotracheal tube. May perform tracheostomy by cutting opening into trachea and inserting a tube.
      iii) May apply closed chest cardiac massage.
      iv) Depending on EKG results may apply defibrillator by selecting watt seconds, applying, and raising watt seconds until effective.
      v) Depending on EKG results may administer a prepared intracardial injection of a heart stimulant.
      vi) May decide on and administer IV infusion.
      vii) When patient has been revived performer records reaction to test dose and what was done on patient's chart. Notifies appropriate medical staff; orders aftercare as appropriate; has patient transported to appropriate location.

TASK DESCRIPTION SHEET (continued)

Task Code No. 19

This is page 3 of 3 for this task.

List Elements Fully

Makes sure patient is informed of the type of drug that caused the reaction.

viii) Terminates procedure by notifying appropriate staff. If out-patient or in an ambulatory care unit, arranges for hospitalization.

b. If performer judges that patient displays a strong (but not emergency) allergic reaction:

- i) Performer may order and administer a cortico-steroid, an antihistamine, or atropine.
- ii) Performer decides whether the reaction is sufficiently controlled for patient to tolerate the full dosage needed for the radiographic procedure; if appropriate, decides whether to proceed to administer the full dosage.
- iii) If performer decides to terminate, performer records details of the test and the reaction on patient's chart and requisition form. Explains to accompanying adult or patient that patient is allergic to the iodine-based solution.
- iv) Terminates procedure as appropriate.

c. If performer judges that patient can tolerate the contrast dose for the procedure scheduled, indicates this on patient's chart and/or requisition sheets. Notes any reaction and what was done. If appropriate, recommends administration of antihistamine or cortico-steroid before the procedure.

d. If appropriate and if performer decides to proceed with full dosage of the contrast solution, performer makes sure that materials are present for full dosage injection.

List Elements Fully

- i) Performer injects full dosage of radiopaque solution remaining in syringe, or uses second syringe as described above, checking proper amount before injecting.
- ii) Performer observes patient for signs of severe reaction to the full dose of contrast solution. If there is a severe reaction, performer proceeds, as described above, with emergency care.
- iii) If there are no serious adverse reactions, performer tells radiologic technologist when patient is ready for radiography.
- iv) Performer may remain on call in case of delayed reaction during radiographic examination. If there is a delayed serious reaction, performer proceeds as described above, with emergency care.

9. Performer may record results of test on patient's chart and sign chart and/or requisition form.

TASK DESCRIPTION SHEET

Task Code No. 33

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Sutures removed; healing evaluated; wound irrigated, dressed, bandaged; medication prescribed and/or administered; record entered.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's chart; pen; requisition forms; sterile gloves; antiseptic solution; swabs; sterile clamp, forceps or tweezers, scissors; sterile syringe; sterile dressing; bandages; tape; medications as ordered

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to have sutures removed; accompanying adult if pediatric patient; subordinate

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Removing any patient's sutures, by reviewing case; applying antiseptic; lifting up sutures using clamp; cutting sutures and removing with forceps or tweezers; evaluating healing; ordering irrigation, bandaging, and/or antibiotic medication; ordering follow-up if needed; recording.

List Elements Fully

Performer removes patient's sutures as a result of:

a. Having performed incision and suturing personally, after ordering revisit for removal of sutures.
b. Referral to performer.

1. If appropriate, reviews patient's chart to ascertain relevant medical history. Performer may decide to delegate all or part of procedure to co-worker or subordinate. If so, explains what is to be done.

2. Performer orders materials to be used or checks materials already prepared.

3. Performer greets patient and accompanying adult if patient is child. Explains what will be done.

   Performer examines sutured areas and notes condition and healing.

4. Performer has patient prepared and dons sterile gloves. May personally swab area with antiseptic solution.

5. Performer uses clamp to hold up stitches; cuts sutures with appropriate scissors. Pulls out sutures with forceps or tweezers.

6. Examines wound for signs of infection. May decide to irrigate with antiseptic or or-

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 33

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
der wound irrigated. May use syringe or pour on solution. If performer decides that antibiotics are needed, orders and administers or has administered by subordinate. Writes and/or signs order for medication. Performer may explain to patient (or accompanying adult) how to take medication at home. 7. Performer may dress and bandage wound or have subordinate dress and bandage, specifying what to use and any medications. May order follow-up examination. 8. Enters record of what was done and any medication prescribed on patient's chart.	

TASK DESCRIPTION SHEET

Task Code No. 65

This is page 1 of 5 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Materials checked;specimen(s) received from MD; slides fixed;cultures,tissue samples prepared for lab(s);record entered on labels,order forms,chart as directed;delivery to lab(s) arranged.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Pt.'s requisition sheet,ID information,MD orders; labels,lab order forms;bags;procedure tray with sterile caps,test tubes,containers,culture media, preservative,slides,fixative,eye dropper,caps, tweezers,needle;rubber bands;test tube holder;pen; soap;sterile gown,gloves,mask;shielding;biopsy syringe,brushes,clamp and/or forceps with biopsy sample;emesis basin,suction machine drainage bottles,or collection bottles with specimens;disposable receptacles

3. Is there a recipient, respondent or co-worker involved in the task? Yes...( ) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Clinical physician or radiologist in charge;any patient;nurse;radiologic technologist;co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing specimens such as extravascular body fluids,washings,cell and/or tissue biopsies for transportation to laboratory,by checking type of specimen and lab tests to be ordered and arranging for needed supplies;receiving fluid or biopsy specimen;smearing and fixing slides for cytology,placing samples in culture media for bacteriology,placing tissues in preservative for histology;recording ID information,type of specimen,site,test ordered on label,order forms,chart as directed;having MD approve;arranging for delivery to lab(s).

List Elements Fully

Performer prepares specimens such as extravascular body fluids, washings, cell and/or tissue biopsies for transportation to the laboratories as a result of:

a. Regular assignment.
b. Request by co-worker.
c. Receiving requisition sheet for a particular examination.

Performer may check schedule sheet and note nature of the examination, the type of specimens to be obtained,and the type(s) of laboratory test(s) ordered; performer may receive orders from supervisor or MD; or performer has standing orders for the procedure(s) based on the type of examination involved.

1. Performer reviews the requisition sheet, orders, or discusses with the physician involved to determine what is required and the timing:
   a. Performer checks patient's identification information for use in preparation of lab slips and labels. Notes patient's name, sex, age, ID number, and,depending on whether patient is in-patient, out-patient,or emergency patient, any other relevant information for records.
   b. Performer notes the nature of the examination

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6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 65

This is page 2 of 5 for this task.

List Elements Fully

and the type of specimen to be collected, such as spinal fluid in connection with spinal tap, myelography, pneumoenchephalography; joint fluid in connection with arthrography;cyst fluid in connection with cyst puncture; bronchial washings or sputum from bronchoscopy; cells and tissue samples in connection with bronchoscopy, lung or renal biopsy.

c. Performer notes the nature of the laboratory examination(s) to be prepared for, such as cytologic (cell) evaluation, bacteriologic or fungus culture evaluation, histologic (tissue) evaluation.

   i) Notes the agent to be used for fixing slides, the medium or non-use of medium for transporting cultures, and the agent to be used for transporting tissue specimens.
   ii) Notes special requirements such as special culture medium in culture tube to be obtained from laboratory; use of saline moistened sponge in sterile basin to transport tissue to be photographed; or choice of alcohol and ether, formalin, or air drying to fix slides--depending on the nature of the pathology to be tested for.
   iii) Notes the likely number of separate specimens to be prepared during procedure; reviews the type of record keeping required.
   iv) Notes whether the specimens are to be treated as infectious materials, and/or require rapid processing and delivery to laboratory.

d. Performer may discuss timing of the procedure and what is involved with

List Elements Fully

the physician who will obtain the specimen(s).

2. Performer prepares ahead for receiving and preparing the specimen(s):

   a. If not already done, performer checks that the materials needed are present or decides to assemble procedure tray personally.

      i) Checks for appropriate specimen containers and/or test tubes and makes sure that they are sterile and empty or contain an appropriate fixing or preserving agent and/or the correct culture medium for the type of test involved.
      ii) Checks that sterile slides, rubber bands, tweezers are available.

   b. If not already done, has labels and lab order forms prepared ahead with patient's identification information, or decides to do personally.

      i) Fills out laboratory information such as nature of specimen and type of test as appropriate.
      ii) Notes the additional clinical information to be filled in as the specimen(s) are obtained. If appropriate, has a label prepared identifying a sample to be treated as infectious material such as pleural secretions.

   c. If performer will be in examination room during radiography or fluoroscopy, performer dons appropriate lead shielded garments.
   d. Prepares as appropriate to carry out procedure using sterile tech-

TASK DESCRIPTION SHEET (continued)

Task Code No. 65

This is page 3 of 5 for this task.

List Elements Fully

nique. May don sterile garments. Washes hands as appropriate.

e. Performer takes his or her place at examination table and awaits orders from physician in charge.

3. If the specimen is a nonvascular body fluid such as joint fluid, spinal fluid or cyst fluid, performer proceeds as follows:

   a. Performer stands by as physician inserts appropriate needle or cannula and aspirates fluid or allows fluid to drain. For cyst puncture makes sure that correct preservative is in test tube or container.
   b. Performer either holds sterile container or test tube while physician ejects fluid from syringe in appropriate amount, or performer fills sterile container or test tube with appropriate amount of fluid from collection container or syringe after gravity drainage.
   c. Checks for proper amount and caps each container or test tube as prepared. Sets test tubes into holder.
   d. Washes hands as appropriate.

4. If the specimen is in the form of bronchial washings or sputum, performer proceeds as follows:

   a. Performer stands by to receive specimen in emesis basin or collected in drainage bottle of suction machine from staff member or physician. May await orders while physician observes the condition of specimen.
   b. Performer uses decontamination technique in preparing bronchial secretion specimen for laboratory as ordered:

      i) Plans steps so that contaminated objects can be disposed of or discarded.

List Elements Fully

      ii) Keeps the outside of the laboratory container free of any contact with the material.
      iii) Disposes of all objects or containers used in appropriate disposal containers or in containers used for objects to be sterilized.

   c. If the specimen is in an emesis basin, performer may choose container with saline solution or culture medium and/or container with ether-alcohol preservative, depending on whether bacteriologic or cytologic testing is ordered.
   d. Uses sterile bacteriologic container if washings have already been produced by irrigation of bronchial site with saline.
   e. As appropriate, performer pours specimen from emesis basin or drainage bottle into prepared laboratory container or tube. If appropriate, uses capped drainage bottle of suction machine as container for laboratory.
   f. If sample is viscous, performer prepares for culture using culture tube prepared with appropriate medium:

      i) Removes cotton stopper; maintains sterility of insertion end.
      ii) Removes applicator by grasping wood end and not allowing swab end to touch rim of tube.
      iii) Wipes swab over or into collected sample.
      iv) Reinserts applicator in tube avoiding contact with outer surfaces. Inserts up to where stick is held in fingers. Replaces stopper to plug opening and hold end of stick above rim of tube.

TASK DESCRIPTION SHEET (continued)

Task Code No. 65

This is page 4 of 5 for this task.

List Elements Fully

- v) May break off protruding end of stick and cap tube.
- vi) Places label near rim end of tube.

g. Makes sure that container is securely stoppered or capped.

h. Discards unused portion of specimen and objects in contact with specimen in appropriate receptacle and uses decontamination technique to remove gown, mask, gloves. Washes hands.

i. Writes in appropriate information on each label such as site of washings, type of specimen, time, date. Attaches labels to identify specimens as "infectious material" if appropriate.

j. Places each labeled container into a clean paper or plastic bag. Attaches lab order form to surface of each specimen bag.

5. If the specimen is obtained by brush, needle aspiration or cutting needle biopsy technique, performer proceeds as follows:

a. With biopsy performed with needle provided with cutting action and clamp, forceps, or other retaining device, performer has tissue specimen jars with lids prepared ahead with preservative such as formalin or saline (depending on whether specimen will be photographed):

- i) Holds each container while physician drops specimen directly into container. Caps container.
- ii) Verifies the type of tissue and site and records on label.

b. With biopsy performed with needle aspiration technique, performer prepares appropriate containers and slides depending on the types of tests to be run:

List Elements Fully

- i) Places clean (or sterile) slide to receive specimen and stands by while physician ejects the aspirated material from syringe onto slide.
- ii) Performer uses sterile tweezers and picks out the tissue fragments visible on the slide. Places into tissue containers, caps, and records on labels as described in a, above.
- iii) If a bacterial culture is to be prepared, performer may wait while physician takes up saline solution into syringe and mixes with aspirated material. Performer prepares appropriate tube(s) for culture and holds while physician ejects contents into prepared culture tube. Performer caps and records on label as described above.
- iv) If a fungus culture is to be prepared, performer holds test tube with appropriate agar medium for culture while physician ejects contents into one or more containers. Caps and records as described.
- v) Performer prepares several glass slides with remaining material as described below in step d.

c. With biopsy performed using brush technique (usually with bronchoscopy), performer receives brushes as samples are taken and prepares as appropriate for histologic (tissue), bacterial or fungal (cultures), and/or cytologic (cell) evaluation:

- i) Performer receives the brushes for bacterial or fungal culture and places directly into sterile test tubes prepared with appropriate saline or

TASK DESCRIPTION SHEET (continued)

Task Code No. 65

This is page 5 of 5 for this task.

List Elements Fully

"transport medium" or other appropriate medium. Records site on label.

ii) If histology samples are available on brushes performer uses sterile tweezers or needle and "teases" off tissue from the brushes. Drops into appropriate container with appropriate formalin preservative and caps. Records site of brushing and nature of tissue.

d. Prepares slides for cytology tests as follows:

i) May prepare sterile glass slides by wrapping a rubber band around one end of side. Uses sterile technique and holds slide by side margins to prevent contamination.

ii) Uses sterile applicator and dips into the moist specimen or uses brushes used to collect sample. Spreads the material evenly and thinly on the center of the slide by rolling brush or applicator tip across center. May smear by using a second sterile slide.

iii) If slide is to be fixed, performer quickly applies a few drops of ethyl alcohol, albumen, alcohol-ether or formalin depending on whether lipoma is suspected and/or institutional practice.

iv) May set one or more slides aside for air drying. May place a second slide on top of first and press firmly. May place slides into bottle of fixing agent and cap.

v) Performer records on ID label (or bottle) the site from which the specimen was obtained as directed.

List Elements Fully

6. Checks identification information on all labels. Records on each label as appropriate the site from which the sample was drawn, the nature of the sample, the date and the time.

   a. If appropriate, numbers a series of specimen containers in their order of collection. Labels each container separately.
   b. Makes sure that labels are firmly attached to containers.

7. If not already done, performer prepares lab order forms for the tests required. Has physician fill out any required clinical information and sign order forms as appropriate. Attaches forms to specimen containers.

8. If appropriate,performer may record on work sheet or as appropriate the amount of fluid or tissue obtained and tests ordered. With spinal puncture performer may record fluid pressure dictated by physician as read from manometer.

9. Depending on the nature of the specimen, the tests ordered,and institutional procedures, performer may place one or more specimens in a designated location for transfer to appropriate laboratory(s), may give to co-worker for immediate delivery to lab, and/or performer may decide to hand-carry to laboratory personally at termination of procedure.

TASK DESCRIPTION SHEET

Task Code No. 69

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Medical x-ray film unloaded from holders in darkroom under safelight;identification information transferred to film;processor adjusted;short or roll film spliced to leader; film inserted in processor; developed film placed on view boxes or for pick up; missing information marked on films; malfunctioning noted for attention or reported.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Exposed films in cassettes,nonscreen holders, boxes or roll film cartridges;requisition sheets or name cards;pen;automatic processor;timer switch;temperature indicator and thermostat;flasher device;unexposed sheets of x-ray film;tape;scissors; felt marker; light switches; view boxes; knife; perforator

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologic technologist(s); radiologist(s)

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Processing exposed x-ray film in automatic processor by working under safelight;unloading film holder(s); transferring identifying information to film using flasher;adjusting temperature and timer if appropriate;splicing small size film to leader film;inserting in machine;placing for use or on view boxes;marking missing identification information after processing; reporting or deciding to investigate processing problems.

List Elements Fully

Performer processes exposed x-ray films in automatic processor as a result of:

a. Decision.
b. Request.
c. Regular assignment.

1. Performer obtains exposed x-ray film in cassette or nonscreen film holder from x-ray machine or co-worker, and obtains accompanying card with identification information. Performer may also receive cartridges of roll films and/or boxes of exposed chest films.
   a. Performer may be told which films are to be given priority or the "stat" films may be so indicated.
   b. If performer processes films as a regular assignment, exposed films in holders and identification cards may be brought by co-workers, or performer may find them waiting in pass box for exposed films. (Buzzer may signal that films have been placed for developing.)
   c. If processing films exposed personally,performer may prepare identification card by copying appropriate information from x-ray requisition sheet onto blank card.

2. If not already there, performer goes to darkroom.Does not enter while red light is

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 69

This is page 2 of 3 for this task.

List Elements Fully

on; if open, knocks to make sure that room is empty or can be entered.

a. Performer checks that temperature is correct in water circulation system (controls developer and fixer temperature) by checking temperature indicator. If needed, turns thermostat knob to bring to correct temperature. Checks timer setting.
b. When performer is ready to process film(s), closes and bolts door to darkroom. Makes sure that no white light is shining in darkroom from any source and that safelight is on. Makes sure hands are clean and dry.

3. If processing numbers of films at a time, performer arranges cassettes and film boxes for removal of exposed films.

a. Performer processes stacks of radiographs resulting from serial filming (vacuum cassettes) as a unit and in order as they are stacked. May give priority.
b. With nonscreen holders, performer first notes whether these contain medical screen x-ray film for automatic processing or nonscreen film requiring hand processing. Sets the latter aside in their holders or gives to co-worker doing hand processing.
c. Performer may separate out films requiring non-standard processing time (such as mammograms). If so, adjusts timer as appropriate before feeding in such film.

4. Performer may mark standard size films with identification information as appropriate by using the identification cards accompanying the cassettes and holders. (May delay marking serial films until after processing.)

List Elements Fully

a. Performer opens cassettes by releasing lock bar, opening lid, and lifting film out by edges; opens non-screen cardboard holders and lifts out film by edges. Performer handles each film by its edges to avoid creating artifacts.
b. Inserts each film into flasher device and places card with identification information into proper slot in flasher device for transference to film.
c. Performer activates flasher by pressing down on device. Removes card and places in appropriate pass box or receptacle.
d. With vacuum cassettes performer uses knife or scissors to cut open plastic envelopes containing cassettes and proceeds to unload cassettes, keeping films in order.

5. If film is not a size appropriate for direct insertion into automatic processor (such as roll film), performer obtains unexposed sheet of film of appropriate size from storage cabinet. Splices film and sheet edge-to-end, using tape, so that standard sheet acts as leader film entering the processor's feeder tray. Makes sure that no adhesive is left exposed.

6. If performer is processing a large number of films and is using an automatic feeder tray, performer stacks films by size according to manufacturer's directions and places on feeder tray. Processes serial films separately and in order. Turns switch on when ready.

7. If performer is processing roll film and is using an automatic roll film processor, performer unloads roll film; places spool on shaft of magazine; unwinds a portion. Inserts and threads leader film as appropriate in

TASK DESCRIPTION SHEET (continued)

Task Code No. 69

This is page 3 of 3 for this task.

List Elements Fully

List Elements Fully

and around roller assemblies according to manufacturer's directions. Splices leader film to exposed film end-to-end with tape; advances film as appropriate and adjusts controls.

8. If performer is manually feeding film, performer holds film by edges; inserts into feeder slot of processor gently until the film is engaged by the feeder rollers.

9. Performer may place empty cassettes, nonscreen holders or film box in storage bins or may decide to reload. With automatic roll film processor, performer may wind processed roll film on rewind assembly and place for pick up. Removes film magazine from processor.

10. If there is audible alarm or other indications that machine is not functioning, performer shuts the machine and may report or decide to inspect personally.

11. Performer makes sure that no unexposed film is in the open before turning on lights or leaving; does not do so while film is being processed if fogging of film may result.

12. When the films have been processed, performer may obtain the developed films from the processor. Obtains serial films as a unit.

    a. Performer may place films on light boxes and check that the identification information is clearly imprinted on the film.
    b. May check that right or left markers, other view identifying information or, for series, that time refererences have been properly reproduced through use of lead markers.
    c. Performer may use a felt marker to write in missing identification information, date, and view information. Refers to information sent with films or performer judges from the films which radiologic technologist was involved and obtains missing information. Sets films aside if no identification information is obtainable.
    d. With serial films (if not already identified on film) performer may obtain identification numbers from card accompanying stack of cassettes. Prepares perforator with proper ID numbers. Perforates each film with the ID information by slipping edge of film into perforator and pressing down.
    e. Performer notes whether films show artifacts such as scratches, streaks, fogging, etc., that may be due to improper processing. If so, may decide to investigate problem or report.

13. Performer may inform appropriate staff member that films are on view on boxes, may carry to radiologist, or may place for pick up as appropriate.

TASK DESCRIPTION SHEET

Task Code No. 70

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Solutions and equipment for hand processing inspected; developer, fixer and other solutions replaced, replenished, and/or stirred; hangers cleaned; dryer adjusted; temperature adjusted; equipment readied for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Hand developing tanks, inserts, with developer, water, acid stop, fixer, photoflow; developer and fixer chemical ingredients; measuring implements; stirrers; temperature thermostat and indicators; rubber gloves; goggles; apron; stoppers; cleanser solutions; brushes; cloths; film hangers; pH testing set; potassium iodide; detergent; water; dryer; acetic acid; dropper

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Inspecting, cleaning and readying x-ray film hand processing equipment for use by checking chemical solutions; draining, cleaning tanks; replacing or replenishing chemical solutions; stirring; checking temperatures and adjusting; cleaning film hangers; checking dryers and light leaks; indicating when ready.

List Elements Fully

Performer checks or prepares manual x-ray film processing tanks and equipment for use at start of day or periodically as result of:

a. Assignment
b. Request to check problems in processing.
c. Decision to do.

1. If not already there, performer goes to darkroom; does not enter while red light is on; if open, knocks to make sure that room is empty or can be entered. Makes sure that no unexposed film is in the open before turning on lights other than safelight.

2. Performer removes covers of developer and fixer solutions and water bath.

   a. Performer checks for signs of contamination, dirt, or exhaustion. Notes whether developer solution is brownish in color (oxidation) or milky (exhaustion).
   b. Notes whether there is a build up of debris in any of the tanks.
   c. May check pH of fixer by adding one drop of fixer to a prepared small amount of 10% potassium iodide and note whether solution turns milky or cloudy.

3. If performer notes or has been told that the developer no longer brings up the

OK-RP;RR;RR

6. Check here if this is a master sheet..(✓)

TASK DESCRIPTION SHEET (continued)

Task Code No. 70

This is page 2 of 2 for this task.

List Elements Fully

contrast on exposed x-ray film, or if contamination, dirt, or exhaustion is evident in any of the tanks, performer changes solutions:

a. Allows the tank(s) or inserts to drain. Scrubs inserts or tanks thoroughly to remove dirt and hardened chemicals. Rinses thoroughly with water and allows to dry.
b. Performer puts on eye protectors, apron and rubber gloves. Following manufacturer's directions, performer refills developer and/or fixer tanks using bottles of prepared solutions. Makes sure not to confuse with chemicals for automatic processing. Avoids contact with mouth, eyes, hands, skin, or clothes.

   If performer must mix the solutions, follows manufacturer's directions; prepares solutions from dry chemicals in separate room to avoid contamination with chemical dust. Makes sure all chemicals are dissolved. While filling, performer checks to be sure that insert stoppers are not leaking.
c. Performer may prepare acid stop bath and/or photoflow by adding acetic acid to water in appropriate proportion for acid stop and/or adding detergent to water to prepare photoflow. Mixes thoroughly.

4. Performer may decide that developer and/or fixer solutions need replenishing or replenishes regularly. Adds specific replenishing solution (in strength sufficient to bring solution up to its full strength so as to maintain standard processing time, or in standard strength requiring additions to processing time, depending on institutional practices). Performer stirs solutions with individual stirrers, mixing developer first. Avoids contamination of developer solution.

List Elements Fully

5. Performer checks temperature gauge for water (and/or chemical solutions). If not at appropriate temperature, adjusts thermostat. Waits until temperatures are around 68°F before using.

6. Performer may make sure that film hangers are free of chemical accumulations. Scrubs with a stiff brush and cleanser if needed.

7. Performer may check that there are no light leaks in the room, and repair or report problems.

8. Performer may check drying temperature and humidity and adjust as appropriate.

9. Performer makes sure that covers of chemical solutions are on after inspection or refilling.

10. If preparing or checking for co-worker, performer indicates when equipment is ready for use.

TASK DESCRIPTION SHEET

Task Code No. 71

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

X-ray film for hand processing unloaded in darkroom under safelight; identification information transferred to film; film(s) placed on holders and immersed in tanks for developing, rinsing, acid stop, fixing, rinsing, photoflow; films dried, placed on view boxes or for pick up; missing information marked on films; processing problems noted for attention or reported.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Exposed films in nonscreen holders, cassettes, or roll film cartridges; requisition sheets or name cards; pen; hand developer tank(s) with inserts for developer, water, acid stop, fixer, photoflow; stirrers; temperature indicators; timer; flasher device; film hangers; dryer; scissors; felt marker; light switches; view boxes

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologic technologist(s); radiologist(s)

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Processing exposed x-ray film manually, by working under safelight; unloading film holders; transferring identifying information to film using flasher; checking tanks; placing films on hangers and properly immersing and agitating films for appropriate times in developer, rinse, acid stop bath, fixer, rinse, photoflow; placing in dryer; placing for use or on view boxes; marking missing identification information; reporting or deciding to investigate processing problems.

List Elements Fully

Performer processes exposed x-ray films manually when automatic film processing equipment is not appropriate (most nonscreen film) or not available as a result of:

a. Decision.
b. Request.
c. Regular assignment.

1. Performer obtains exposed x-ray films in nonscreen film holders or cassettes after exposing or from co-worker. Obtains or has accompanying cards or requisition sheet with identification information. Performer may also receive cartridges of roll film.
   a. Performer may be told which films are to be given priority, or the "stat" films may be so indicated.
   b. If performer manually processes films as a regular assignment, exposed films in holders and identification cards may be brought by co-workers, or performer may find them waiting in pass box for exposed films. (Buzzer may signal that films have been placed for developing.)
   c. If manually processing films exposed personally, performer may prepare identification card by copying appropriate information from x-ray requisition sheet onto blank card.
2. If not already there, performer goes to darkroom. Does not en-

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 71

This is page 2 of 3 for this task.

List Elements Fully

ter while red light is on; if open, knocks to make sure that room is empty or can be entered.

3. Performer checks tanks to see that levels of developer and fixer solutions are appropriate to cover films; checks that solutions are not contaminated; checks temperature indicators of water and solutions. If not ready for use, performer decides to ready tanks as required.

   Performer stirs solutions in each tank with separate stirrers,or stirs developer, rinses stirrer, and then stirs fixer to avoid contamination.

4. When performer is ready to process film(s), closes and bolts door to darkroom. Makes sure that no white light is shining in darkroom from any source and that safelight is on. Makes sure hands are clean and dry.

5. If processing a number of films at a time, performer arranges cassettes and film holders on loading bench. Makes sure bench is clean and dry.

   Performer may arrange film holders in the order in which the films will be processed and in groups according to the amount of processing time required. May load together those that require the same amount of time in developer.

6. Performer marks films with identification information as appropriate by using the identification cards accompanying the film holders:

   a. Performer opens cardboard holders and lifts out film by its edges,or opens cassette by releasing lock bar, opening lid and lifting film out. Performer handles each film by its edges and is careful not to bend so as to avoid creating artifacts. Does not drag film across any surfaces.
   b. Performer inserts each film into the flasher device and places card with identification information into proper slot in flasher device for transference to film.
   c. Performer activates flasher by pressing down on device. Removes card and places in appropriate pass box or receptacle.

7. Performer suspends films on hangers, being careful not to bang and scrape films and hangers together:

   a. Places corner being held in bottom of hanger and clips or clamps.
   b. Turns hanger over and secures other two corners.
   c. Makes sure film does not override sides or ends of hanger; checks that film is taut enough not to bulge or flap.

8. Performer sets timer for developer but does not start. Determines time based on type of film and strength of developer solution. Performer removes cover from compartment in tank containing developer solution. Hangs film hanger inside,immersing all films on hanger. Starts timer. Performer agitates the suspended films in the developing solution to loosen air bubbles that may be on the film surfaces; may do so occasionally throughout developing period. Rinses hands in water and dries. Replaces tank top.

9. After waiting until timer signals end of developer stage, performer opens top; removes hanger quickly and immerses in rinse water bath, being careful not to allow water to drip back into developing tank. Replaces cover.

TASK DESCRIPTION SHEET (continued)

Task Code No. 71

This is page 3 of 3 for this task.

List Elements Fully

On removing film from developer, performer notes appearance of film; checks for grayish appearance which indicates weak developer or improper exposure.

Performer agitates film in running water for about 30 seconds and allows excess water to drain off. Rinses and dries hands.

10. Performer may immerse film hanger in an acid stop bath (solution of acetic acid in water) for 30 seconds.

11. Performer removes cover from compartment in tank containing fixer solution. Sets timer for 2 to 3 times the period set for the developer solution. Hangs film hanger in fixer solution and agitates for 20 to 30 seconds. Activates timer and replaces top. Rinses and dries hands.

12. After waiting until timer signals end of fixer stage, performer opens top; removes hanger and rinses for about 30 minutes in running water. Replaces top. Performer may then immerse hanger in a photoflow (detergent) solution. Performer may hang up radiographs after fixing for "wet reading" by radiologist. Places hangers so that they do not drip on any items or solutions.

13. Performer shakes off excess water and places hanger in dryer (as appropriate to type used.) Sets timer and activates. Dries hands.

14. Performer removes radiographs from dryer as soon as they are dry. May place on wall hanger with requisition sheet(s).

15. Performer may place films on view boxes and check that the identification information is clearly imprinted on the radiograph(s).

List Elements Fully

a. May check that right or left markers or other view or time identifications made by use of lead markers are shown.

b. Performer may use a felt marker to write in identification information. Refers to information sent with film or performer judges which radiologic technologist was involved and obtains missing information. Sets films aside if no identification information is obtainable.

16. Performer notes whether radiographs show artifacts indicating problems with developing technique such as exhaustion, overconcentration, incorrect mixing, or contamination of solutions, incorrect temperature, fog, or other indications of exposure to light, or scratches or marks due to improper handling. Performer may decide to investigate problem.

17. Performer may decide to reload cassette(s) or holder(s) with unexposed film.

18. Performer may remove radiographs, trim corners and place with requisition sheets, or performer may inform appropriate staff member that films are on view.

19. Performer makes sure that no unexposed film is in the open before turning on lights or leaving.

TASK DESCRIPTION SHEET

Task Code No. 72

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

X-ray film cassette(s), nonscreen film holder(s), and/or film boxes loaded with unexposed film; intensifying screens inspected, cleaned or replaced; loaded film holders placed for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Empty x-ray film cassette(s), nonscreen film holder(s), film box(es); unexposed sheets or packages of x-ray film in protective paper;intensifying screens; antistatic cloth or brush; roll film; cartridge holders; scissors; storage bins; light switches; pass box; vacuum heat sealer and bags

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Loading x-ray film cassette(s), nonscreen film holder(s), box(es), and/or roll film cartridges by working under safelight; obtaining appropriate film type, speed, size; matching with cassette, intensifying screen(s), or nonscreen holder; inspecting, cleaning or replacing intensifying screens; inserting film(s) in holder(s); placing or delivering for use.

List Elements Fully

Performer loads empty cassette(s), nonscreen film holder(s), or film box(es) (magazines for chest x-ray films) as a result of:

a. Decision to reload after processing film(s).
b. Request.
c. Regular assignment.

1. If not already in darkroom, performer goes to darkroom.
   a. Performer does not enter while red light is on; if open, knocks to make sure that room is empty or can be entered.
   b. Closes and bolts door to darkroom.
   c. Makes sure that no white light is shining in darkroom from any source and that safelight is on.
   d. Makes sure that hands are clean and dry.
2. If performer is reloading cassette(s), film holder(s), or box, notes the size, type of film (nonscreen film for direct exposure radiography or medical screen x-ray film for use with intensifying screens in cassettes), and film speed that was used in the cassette, in the nonscreen holder, or the box to be reloaded. If a cassette, performer may note the speed of the intensifying screens used. Notes whether a medical screen film is used in a nonscreen holder.

OK-RP;RR ;RR

6. Check here if this is a master sheet..(v)

TASK DESCRIPTION SHEET (continued)

Task Code No. 72

This is page 2 of 3 for this task.

List Elements Fully

Performer notes type and speed of film by referring to the identification system in use, such as lead marking numbers and letters on cassette.

3. If performer is loading empty cassettes and holders for storage in various examination rooms (for specific procedures or types of examinations), performer consults standardized orders for combinations of film size, type, and speed with cassettes, intensifying screens, or nonscreen holders. For vacuum cassettes obtains cassettes regularly used in serial filming.

4. Performer arranges materials to be used on work bench:

   a. Obtains cassettes of appropriate size(s), nonscreen holder(s), or box to be loaded, or places the one just unloaded for reloading on bench.
   b. May obtain antistatic brush or cloth to clean intensifying screens.
   c. Performer obtains carton(s) containing films of appropriate type, size, and speed from storage shelf or bin. Opens as appropriate for removing x-ray film(s).
   d. Performer may obtain new intensifying screens of appropriate size and speed if they may be needed to replace old or damaged screens in the cassettes.
   e. For vacuum cassettes obtains plastic bags and vacuum heat sealer.

5. Performer loads cassette x-ray film holder (for double intensifying screen technique) as follows:

   a. Performer releases the lock bar of empty cassette if locked and opens the cassette.
   b. Performer inspects the surface of the intensifying screens mounted within the cassette on the front and back sections:

List Elements Fully

      i) If there is lint on the screen, performer removes by using a special antistatic brush or cloth.
      ii) If there are contaminating foreign objects on the screen surface performer may decide to clean screens or have this done.
      iii) If the screen is damaged or excessively stained, performer may discard screen and replace with a new screen of the same size and speed.

   c. Performer inserts sheet of x-ray film by removing a sheet from its carton in its interleaving paper wrapping. Inverts film so that the open ends of the paper fall away. Performer removes the film from the paper by using thumb and forefinger at one edge and handling only at the edges. Avoids bending the film.
   d. Performer lays the film gently onto the open cassette by handling only at the edges.
   e. Performer closes the cassette and turns the lock bar. Discards protective paper.
   f. Repeats for as many cassettes and sizes as appropriate.
   g. When preparing vacuum cassettes, places each loaded cassette into a plastic bag and closes top. Places unsealed end of bag with sides together into edge of vacuum heat sealer and applies heat to seal. Stacks vacuum cassettes together.

6. Performer loads cardboard nonscreen film holders (for direct exposure technique) as follows:

   a. Performer releases the pivotal clip on the film holder if closed, and opens the film holder envelope.

TASK DESCRIPTION SHEET (continued)

Task Code No. 72

This is page 3 of 3 for this task.

List Elements Fully

b. Performer removes the film from its carton in its protective folder with thumb and forefinger of one hand. Seizes the film and paper at the lower end with other hand, without bending or crimping.

c. Performer gently lays the film, in its paper folder, in the envelope holder. Brings the large top flap into place. Folds the short side flaps and the end flap over and latches the holder cover.

d. For prepacked films in paper holders performer simply removes from carton.

e. Repeats for as many film holders and sizes as appropriate.

7. Performer loads box with x-ray films (for chest x-ray machines) by lifting out prepared package containing the appropriate number of films. Removes wrappings; riffles films while holding at edges to separate. Inserts noninterleaved films between pressure plate and side of box; closes.

8. Performer loads roll film into cartridge holders as follows:

   a. Obtains and opens cartridge holder; obtains appropriate film for spot filming, cineradiography, videotape, etc.

   b. Cuts leading end of film at right angle with long axis, being careful not to cut into perforations. Then clips off both corners of leading edge, being careful not to cut perforations.

   c. Unwinds appropriate length of film and threads film onto spool on supply spindle as appropriate for the equipment. Mounts spool so that film unwinds appropriately.
      i) Checks pressure plate for proper position of film.
      ii) Rotates sprocket; checks that pull-down claw enters film perforation, and that loops are maintained.
      iii) Checks that sprocket film shoe is closed.
      iv) Removes slack and closes cover.

List Elements Fully

9. Performer closes and replaces film carton in bin or on shelf. Replaces other materials.

10. Performer makes sure that no unexposed film is in the open before turning on lights or leaving. (Does not do so while film is being processed if fogging of film may result.)

11. Performer may deliver loaded cassettes, stacks of vacuum cassettes, nonscreen holders, film boxes or cartridges to rooms to which the types, sizes and speeds of x-ray films and screens are appropriate; may place in storage location by type; may place in pass box, give to co-worker, or performer may remove for own use.

TASK DESCRIPTION SHEET

Task Code No. 73

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient and/or accompanying adult reassured about radiography and fluorosocpy procedures and related fears.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Nothing

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to receive radiographic examination; accompanying adult

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Reassuring any patient and/or accompanying adult about x-ray and/or fluoroscopy procedures, by being sympathetic, interested, professional, and calming patient or adult; explaining safety of procedures, what will happen, and answering non-medical questions about the procedures.

List Elements Fully

Performer reassures patients who are to have radiographic examinations and/or fluoroscopy and/or any accompanying adult. Performer does task as regular assignment or simultaneously in connection with other tasks in which performer interacts with the patient.

1. If regular assignment, performer greets patient and/or accompanying adult in waiting area or examination room as appropriate to institutional arrangements.
2. Performer reassures patient and/or accompanying adult about the safety of the procedures; explains what is to happen.
3. Performer helps to calm patient and/or adult by being sympathetic and behaving in an interested and professional manner to calm the patient.
4. Performer answers questions about procedures, but advises patient or adult to consult physician or radiologist about medical questions. Performer makes sure that patient understands that this is not due to lack of interest but a matter of professional ethics.
5. If in examination room, performer may explain the use of the equipment, using language understandable to the person(s) involved.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 74

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

A patient or accompanying adult reinforced about procedures to follow at home prior to coming for radiographic examination.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

X-ray requisition sheet; written prior preparation orders for patient; instruction sheet on prior preparation

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any out-patient; accompanying adult; receptionist or co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Explaining to any out-patient or accompanying adult proper at-home procedures to follow prior to coming for radiographic or fluoroscopic examination, by reading what is required; presenting written instructions; explaining; and checking that patient understands.

List Elements Fully

Performer may be asked to reinforce orders which an out-patient is to or was to have followed at home before certain radiographic examinations as a result of:

a. Request.
b. Regular assignment.

1. Performer asks what examination is involved and/or reads requisition form to learn what radiographic procedure was ordered and/or orders for any prior preparation for the patient to carry out at home, such as cleansing enema and/or abstinence from food or drink for a given period of time.

2. Performer presents written instructions to patient. Explains carefully to patient what must be done or not done before coming for the next appointment for radiography. Checks to be sure that patient understands. May explain reasons, nature of examination and details of what to do.

   If appropriate, performer explains to adult accompanying a pediatric patient how to prepare patient.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 76

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Orders filled out for non-medicinal supplies based on standing orders, need determined after inventory check, and requests by staff or MD's; copies of orders retained.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Supplies of non-medicinal materials; requisition form; reference file for outside orders; blank index file cards; pen; carbon paper; note book; par level lists

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

MD's; co-workers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking supplies and ordering non-drug materials needed by department by filling out or having co-worker fill out standing orders; taking inventory and ordering items below par levels; noting or asking for requests for items; filling out requisition form or outside order form in duplicate; having orders delivered or placed for pick-up.

List Elements Fully

Performer checks the supply of non-drug materials (ordered from storeroom rather than pharmacy) as a result of:

a. Regular procedure.
b. When notified of shortage by co-workers.
c. Own decision after noticing shortage.

1. Performer decides what to order and quantities in any of following ways:
    a. May have co-worker fill out items ordered regularly on standing order; signs requisition form with predetermined items and amounts.
    b. Performer may receive request or inquire from MD's or co-workers about requests for items to be newly ordered or reordered:
        i) If item(s) are not regularly stocked in department but are available in institution's storage supplies, performer adds to requisition sheet.
        ii) If item has been ordered from outside the institution, performer obtains information on supplies by getting card from reference file; copies needed information on index card, along

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 76

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
with quantity of order and name of item(s). iii) If item has never been ordered before, performer questions co-worker requesting and fills out card for reference file; then copies information on order card, along with quantity of order and name of item(s). c. Performer takes inventory of non-drug supplies on hand, noting which supplies are below "par" or desired minimum levels. Performer determines shortages by referring to list of "par" levels (standard minimum inventory levels), labeled shelves with par levels, or uses own experience to judge needs based on usage. Performer adds names of items and quantities needed to requisition list or checks off items and writes quantities. 2. When requisition form and/or outside order card are completed in duplicate, performer signs and takes to proper location such as supply room or secretary; has co-worker deliver, or places for pick-up. 3. Performer retains duplicate copy of orders, or records orders in notebook.	

TASK DESCRIPTION SHEET

Task Code No. 77

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient's adverse reaction to contrast medium, procedure, or accident evaluated; procedure terminated if appropriate; treatment and/or emergency care administered; hospital or emergency room care arranged if necessary; record of reaction or accident and what was done entered as appropriate.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Requisition form and patient's chart; corticosteroid, antihistamine; atropine; materials and equipment on emergency cart; accident or other report form

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; x-ray department personnel; nursing personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Providing emergency care for any patient having adverse reaction to radiographic contrast medium, procedure, or accident by assessing cause, nature, and severity of the reaction; using emergency care equipment to provide life support procedures and/or palliative medication; deciding whether procedure should be terminated; recording; terminating if appropriate; arranging to have patient sent to emergency room or hospitalized if appropriate.

List Elements Fully

Performer may provide emergency care to patient having an adverse reaction to a contrast material, radiographic procedure or accident (such as falling during procedure) as a result of:

a. Own decision to provide care to patient undergoing procedure conducted by performer.

b. Being notified by technical staff that a patient is having adverse reaction or has had an accident during procedure.

1. If performer has been notified by a staff member of adverse reaction or accident, performer obtains information on the patient's condition, what occurred, what procedure was in progress, and/or the contrast medium administered and how much, depending on the situation involved.
   - a. Depending on situation may make sure that emergency cart is present or called for; may check requisition sheet or find out information from staff person.
   - b. May check what condition patient may be suffering from that could be aggravated by accident.
   - c. Goes immediately to patient.

2. Performer inspects patient visually and determines the patient's state and the severity of the reaction:

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 77

This is page 2 of 2 for this task.

List Elements Fully

a. Performer assesses the severity and nature of the patient's condition, such as cardiac arrest, anaphylactic shock (exaggerated negative reaction to a foreign substance), bronchospasm or laryngospasm (stricture of bronchial tubes or larynx), hypotension (drop in blood pressure), cyanosis (bluish discoloration due to excessive concentration of reduced hemoglobin in blood), urticaria (vascular skin reaction), violent sneezing or,with accident,presence of any pain, abrasions, location of injury.

b. May talk with patient, if conscious, to learn more about what was involved and pain experienced by patient.

3. Performer determines the severity of the reaction or condition by listening for heartbeat, respiration; may check blood pressure; may take EKG reading, using equipment on emergency cart. Performer decides what care to provide based on the severity of the reaction or condition. May decide and arrange to have patient taken immediately to emergency room, especially if an accident has been involved. May investigate chart or inquire about any medical conditions in the patient affecting the choice of care to be provided.

4. If performer decides that life support procedures are required, has life support team called at once,or may personally apply any of the following procedures:

   a. May administer oxygen or air using oxygen tank and mask or ambu bag; may remove any dentures and clear airway using finger or tongue blade.
   b. May decide to establish an airway by removing any dentures and, using a laryngoscope (to view larynx), insert an endotracheal tube.

List Elements Fully

   c. May perform tracheostomy by cutting opening into trachea and inserting a tube.
   d. May apply closed chest cardiac massage.
   e. Depending on EKG results may apply defibrillator by selecting watt seconds, applying, and raising watt seconds until effective.
   f. Depending on EKG results may administer a prepared intracardial injection of a heart stimulant.
   g. May decide on and administer IV infusion.
   h. If in an ambulatory care unit, may arrange to have patient hospitalized at once.

5. If performer judges that patient displays a strong but not emergency allergic reaction, performer may order and administer a cortico-steroid an antihistamine, atropine,or epinephrine.

6. If performer judges that a minor abrasion is the only result of accident, performer may order cleansing and dressing of abrasion.

7. Performer determines whether the patient can tolerate continuation of the radiographic procedure.

   a. If performer decides that procedure should be terminated, notifies appropriate staff.
   b. Performer may record reaction or accident information and what was done on patient's chart or appropriate form. May order aftercare as appropriate;may have patient transported to appropriate location. With adverse reaction makes sure that patient is informed of the type of drug that caused the reaction.
   c. If performer decides that procedure can continue, informs appropriate staff and fills out appropriate forms as required.

TASK DESCRIPTION SHEET

Task Code No. 78

This is page 1 of 2 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Patient's radiographs, scans or ultrasonograms checked for proper ID information; requisition sheet checked for signatures and proper logging; diagnostic materials jacketed with requisition sheets and requested prior radiographic materials, marked with identification; materials placed in the file room or for interpreting.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Radiographs (approved for quality); C.T.T. scans or ultrasound photos; computer print-outs of scans; requisition sheets; holders, jackets and envelopes for materials; pen; file folders; prior diagnostic materials requested; view boxes; felt marker; log book

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Clerk; technologists; radiologists; other physician

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Checking and jacketing patient's radiographs, ultrasonograms, and/or C.T.T. scans with requisition sheets and prior diagnostic materials and placing for filing or interpreting, by matching films and prints with requisition sheets and any prior diagnostic materials requested; checking for signatures, proper logging and identification, placing in proper sequence; inserting in jackets and/or envelopes; marking jackets with identification; placing for interpreting or filing.

List Elements Fully

Performer jackets radiographs and other diagnostic materials such as photographs of C.T.T. scans, ultrasonograms, computer print-outs as a result of:

a. Decision to jacket own work.
b. Regular assignment.
c. Assignment to prepare for work after change of shift.

1. Performer may take radiographs from pile of films already judged for acceptable quality and awaiting jacketing; may find radiographs on view boxes; may find photographs that were allowed to dry; may find computer print-outs awaiting jacketing; or performer may have set own work aside after examination and processing.

2. If not already done, performer reads radiographs on view boxes or inspects photographs and print-outs to ascertain the patients' names and log numbers; groups any that are for the same patient; arranges scans and serial films in numerical order as appropriate.

3. Locates the requisition sheet for each patient for whom there are radiograph(s), photographs or scans and places with appropriate diagnostic materials.

   a. If requisition sheet will be sent later, omits this step.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 78

This is page 2 of 2 for this task.

List Elements Fully

b. May check that required signatures (technologist's, clinician's and/or radiologist's) are present on requisition sheet.

c. If any signature is missing, signs for work done personally and/or arranges to have technologist or physician sign. Records relevant information on scans, ultrasonograms, and/or amount and sizes of radiographs on requisition sheet.

d. Checks that scan or ultrasound photographs are properly coated with print coater and are dry, or arranges to have photographs given protective coating and dried.

e. If any materials are not completely identified, performer makes sure what the radiograph or other record is and who the patient is. Checks on the missing information. Writes in missing information such as patient's name, date,(R or L marker for radiographs) on appropriate corner or back of each radiograph or photograph with felt marker or pen, checking with technologist and/or information on requisition sheet.

f. If any material is not identifiable, performer judges which technologist was involved and obtains the missing information. Sets aside materials for which no reliable information can be obtained.

4. Performer may take requisition sheets to clerk and check that the information in the log book corresponds with the information on the requisition sheets, or has clerk do this.

5. For each patient's materials, such as ultrasound or C.T.T. scan photographs, performer places in appropriate order by reading identification numbers. Slips each photograph into transparent pocket in holder in correct order.

List Elements Fully

Places computer print-out into appropriate envelope. Puts each patient's radiograph(s) into film jacket or envelope; puts jacketed materials and requisition form for each patient into larger jacket or envelope. May write identification information on envelope.

6. If requisition form includes request to have earlier radiographs, scans or ultrasonograms included, may locate and include in envelope. If new patient, performer may prepare file folder and include with other documents.

7. Places to be delivered for interpreting or brings to appropriate location to receive further processing or to be filed.

TASK DESCRIPTION SHEET

Task Code No. 79

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Barium sulfate contrast prepared for use according to standard or special orders in sterile liquid, paste or cream form or in enemas; co-worker informed when ready; enema hung at appropriate height.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Radiologist's orders or standard orders; barium sulfate in prepackaged prepared cream,paste, or enema bags or powder form;sugar,grape juice,lactose or glucose;suspending agent;catheter;saline; water;prepared sterile formula in bottle;sterile measuring implements,gloves,spoon,calibrated cup, container,pitcher;enema bags or cans,tubes,clamps IV pole;blender

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker; radiologist;worker in formula room

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing barium sulfate contrast medium as ordered or for standard use by noting purpose, ingredients, proportions; obtaining materials;measuring and/or mixing solution or paste to be ingested under sterile conditions, or mixing ingredients for enema; assembling and clamping; hanging enema at appropriate height or placing contrast materials for use.

List Elements Fully

Performer prepares barium sulfate contrast for use in radiographic and/or fluoroscopic examination as a result of:

a. Regular assignment to prepare for routine examinations in department or for own use.
b. Request by co-worker for use in specific examination.
c. On specific orders from radiologist for special procedure.

1. If performer is preparing barium sulfate solution, mixture, or suspension for routine adult use, performer notes standard formula to fill or the specific prepackaged formula to obtain.

2. If performer is preparing barium sulfate contrast as a result of request or on specific orders from radiologist, performer notes whether patient is infant, child, or adult, the ingredients to include, such as use of saline rather than tap water, inclusion of an evacuant, use of a flavoring, etc., the proportions, and the means of administration. Prepares work table as appropriate for using of sterile supplies.

3. In preparing barium paste or cream for oral administration, performer does any or all of the following:

   a. Performer obtains the necessary materials, such as prepared sterile barium

OK-RP;RR;RR

6. Check here if this is a master sheet..(v)

TASK DESCRIPTION SHEET (continued)

Task Code No. 79

This is page 2 of 3 for this task.

List Elements Fully

sulfate powder, mixture, or tube of cream in appropriate proportions, sterile spoon, blender if appropriate, grape juice, table sugar, lactose, or glucose, sterile measuring implements.

b. If not already prepackaged, performer prepares paste or cream using sterile water and taking care not to contaminate sterile ingredients. Measures out appropriate proportions of items into container; may use blender. Pours into calibrated cup or container. Covers.

c. Performer places prepared barium sulfate cream or paste or prepackaged cream or paste on tray near patient or on service table. May lay out sterile, packaged spoons.

4. In preparing barium liquid for oral administration, performer does any or all of the following:

   a. If patient is an infant and must receive barium solution by nursing bottle, performer orders from formula room, indicating proportions, and obtains labeled sterile feeding bottle and nipple. Places for use by nurse, radiologist, or technologist.
   b. Performer obtains sterile barium, sterile water or sterile saline, and other ingredients ordered such as lactose, glucose, or sugar, suspending agent, such as carboxy methyl cellulose, or prepared sterile solutions, depending on whether proportions and ingredients required are available in prepackaged form.
   c. If performer must prepare solution, uses sterile gloves and sterile procedures to avoid contaminating ingredients. Measures out proportions with sterile implements and spoon.
   d. If solution is to be introduced with syringe, performer places

List Elements Fully

covered sterile solution for use by radiologist when it is ready.

   e. If solution is to be drunk, performer may place sterile cup and/or straw for use along with solution in covered container, or performer measures out into calibrated cup as directed and places for use.

5. In preparing barium enema(s), performer does any or all of the following:

   a. Performer prepares enemas used for routine adult examinations by obtaining tube(s), clamp(s), commercially prepackaged enema bags with premeasured barium sulfate powder. May obtain pitcher, enema cans, barium sulfate powder.
   b. For routine use, performer may fill prepackaged enema bags with lukewarm water from tap up to line marked on bag and mix thoroughly; attaches tube, and clamps closed. May prepare contents for enema can in pitcher by adding appropriate proportions of barium sulfate and warm water, mixing thoroughly, filling enema cans, attaching tubes and clamping.
   c. Depending on the orders received and the special procedures involved, performer may measure out nonstandard proportions and ingredients such as saline solution instead of water, inclusion (or exclusion) of an evacuant (such as Dulcolax) and proceeds with preparation as described above.
   d. When the enema(s) are prepared according to standard procedure or special orders:

      1) If prepared for departmental use, performer places prepared enemas in designated location.

TASK DESCRIPTION SHEET (continued)

Task Code No. 79

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
ii) If requested by co-worker or ordered by radiologist, performer may place IV stand near patient and hang clamped enema bag at appropriate height or height specified (such as for intussusception). 6. If appropriate, informs co-worker or radiologist when barium sulfate contrast medium is ready for use.	

TASK DESCRIPTION SHEET

Task Code No. 80

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Special procedure or treatment tray(s) stocked according to standard orders and placed for use; decision made to prepare injections personally or have done; emergency cart checked for supplies; co-worker informed when ready.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Materials used for special procedures or treatments such as radiopaque media, sterile needles, syringes, prepared injections, containers for prepared solutions, medicinal and medical equipment; labels; pen; tray: cart; sterile towel; cards listing tray contents for procedures; standard prepared trays

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker(s)

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing materials or trays with medications and materials for special treatments or procedures according to standard orders by obtaining order cards, filling trays or supplementing standard trays with medical supplies; measuring out medicinals and preparing solutions; deciding to do preparation of injections or ordering; checking emergency cart for supplies; covering prepared tray; placing for use or informing co-worker when materials are ready.

List Elements Fully

Performer assembles trays with materials and medications needed for special procedures such as IVP, bronchoscopy, IVC etc., according to standard list, or supplements standard equipment trays, or prepares as ordered as a result of:

a. Decision to do as part of participation in special procedure.
b. Request to do.
c. Regular assignment.

1. Performer may determine which tray(s) to prepare by reading the list of scheduled procedures for that day or period, or knows which tray is required in the context of own work or request made.

2. If performer is to add materials to standard trays, goes to carts on which equipment trays are placed; may decide to label carts according to procedures to be done.

3. Performer goes to location containing files on what equipment and supplies must be added to standard trays for particular procedures or what must be on trays which are to be assembled completely. (Performer may also know tray requirements by heart.)

4. Performer goes to labeled supply drawers or cabinets;

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 80

This is page 2 of 2 for this task.

List Elements Fully

  a. Obtains equipment such as needles, catheters, swabs and syringes needed for procedure. Checks their condition. May assemble equipment such as empty hypodermics. Places on appropriate tray(s).
  b. Performer obtains needed prepared medications from supply areas. Makes sure these are not expired. Checks for proper color, presence of precipitates or other signs of deterioration of the drug or solution. Places on tray(s).
  c. Performer prepares antiseptic, sterile and other solutions by obtaining proper labeled containers, or prepares labels, measures out proper amounts from supply areas, combines ingredients, mixes and covers containers; attaches labels and places on tray(s).

5. If injections must be prepared, performer notes which these are and decides to prepare personally or asks appropriate co-worker to prepare. When prepared, performer checks for proper amount. Places prepared injections on tray(s).

6. Arranges materials on tray. Covers with sterile towel.

7. Performer may check prepared emergency cart to be sure all needed supplies are present. Has missing supplies brought or decides to replace personally as described above.

8. If tray was prepared for a co-worker or on request, performer informs co-worker who requested that materials are ready.

9. If tray is to be used at a later time, places covered tray on cart or in designated location. May label tray.

List Elements Fully

10. If prepared tray is to be used at once, places for use and notifies physician or co-worker that materials are ready.

TASK DESCRIPTION SHEET

Task Code No. 95

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient's urine tested by tablet or dipstick method; color compared with chart and reading recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Physician's orders or patient's check list; patient's urine sample in container; clinitest tablets for sugar and/or ketones; dipstick; eyedropper, water; color charts for urine tests

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Testing a urine sample by tablet or dipstick method and recording by selecting method, obtaining urine sample, using water and urine with tablet for sugar, water on tablet for ketones, and/or dipping dipstick into urine; comparing color change with color chart; reading and recording chart description.

List Elements Fully

Performer uses tablet and/or dipstick method to test patient's urine as a result of:

- a. Request from co-worker.
- b. Regular assignment as part of work-up for patient.
- c. Own decision to do.

1. If appropriate, performer reviews patient's check list or physician's orders.

2. Performer may have patient's urine sample or may decide to have co-worker obtain sample or to do personally.

3. Performer chooses whether to use tablet or dipstick method depending on test requested, availability of materials, and accuracy needed.

   Performer may choose tablet or dipstick when testing for sugar (glucose) and/or ketones (acetone). Performer chooses dipstick for proteins or blood.

4. If performer is to use tablet method:

   - a. For sugar, selects and places proper (clinitest) tablet in test tube. With eyedropper, drops 10 drops of water and 5 drops of urine into test tube; shakes.
   - b. For ketones, selects proper (clinitest) tablet. Drops one drop of urine directly on proper tablet.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 95

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
c. For either, compares tablet's color with color found on appropriate color chart and notes condition described. 5. If performer is to use dipstick method, performer selects dipstick whose different parts change color according to what test that portion is for. Performer dips stick into urine and compares the color of the stick where the part for the test(s) being made are located with color(s) on the chart. Notes condition(s) described. 6. Performer fills out appropriate form or fills out index card with identification information on patient. Records that the test was done and the test results, by copying the chart description noted when the color(s) were compared. 7. Places records in appropriate place and discards specimen.	

TASK DESCRIPTION SHEET

Task Code No. 98

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Clean catch urine specimen obtained and labeled; arrangements made to take to lab; recorded.

2. What is used in performing this task? (Note if *only* certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's chart, requisition sheet, treatment or medication check list, or MD's orders, card and pen; clean catch kit and instruction sheet; self-adhesive urine bag for child (wee bag); label; materials for rediapering baby

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the *kind* of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; physician; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Obtaining a clean catch urine specimen from any patient and preparing for lab by explaining clean catch procedure, giving kit, applying procedures to infant, using soap, water, swabs and self adhering urine bag; labeling, preparing for lab, and recording on patient's chart or index card; arranging to have specimen taken to lab.

List Elements Fully

Performer may be asked to obtain a clean catch urine specimen from patient for use in lab tests.

1. Performer reads patient's chart, requisition sheet or treatment and medication check list, or may receive orders verbally.

2. Performer obtains the materials needed from storage area: for adult gets clean catch kit; for child gets bag to catch urine (wee bag) and kit.

3. If patient is able to provide specimen alone, gives patient materials and instruction sheet, and explains how he or she is to swab penis or vulva, and urinate into container.

4. If patient cannot provide specimen alone (child) removes diaper, swabs penis or vulva; attaches self adhesive urine bag and encourages patient to urinate. After child has urinated, removes bag, closes and labels. May decide to clean and re-diaper baby.

5. Performer labels sample with patient's name, ID number, date, and time. Asks co-worker to take specimen to lab or decides to do personally.

6. Records what was done on chart, requisition sheet or check list, or makes out a card, or reports verbally.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 113

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

General reassurance given to a patient.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

— —

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient or accompanying adult

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Giving any patient general reassurance by listening, by being interested and sympathetic, by reassuring and comforting.

List Elements Fully

Performer offers general reassurance to patient. This can be done separately during incidental occasions such as when patient is waiting for physician or as a simultaneous task while other work is being done with the patient.

1. Performer gives general comfort and moral support by being interested and sympathetic, explaining about the institution in general conversation, or by listening with sympathy and giving reassurance.

OK-RP RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET

Task Code No. 128

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Narcotic or regulated drug supplies on hand and used tallied and checked against totals to be accounted for; discrepancies investigated; refill needs calculated; order filled out, placed, picked up, replaced; cabinet locked and key returned.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Narcotic control sheets; tally sheets; requisition sheets; narcotic supplies on shelves; keys to narcotics cabinet; pen; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker (doing inventory or witnessing); pharmacist; co-workers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking supply of narcotics or regulated drugs (or witnessing count); reordering, picking up, and restocking by obtaining key and narcotic control sheets; taking tallies of drugs on hand and used and comparing with numbers to be accounted for; investigating discrepancies and recording; calculating replacement needs from given par levels; reordering, picking up filled order using appropriate forms; replacing in cabinet; locking cabinet; returning key.

List Elements Fully

Performer periodically checks the supply of narcotic drugs in the department's supply area and reorders as needed, or serves as witness to the procedure. If witness, will be asked to perform by co-worker.

1. Performer obtains keys to narcotics supply closet (from supervisor or designated location).

2. Unless performer is the one asked, performer asks a co-worker to witness count.

3. Performer goes to narcotic closet. Takes narcotic control sheets and tally check sheet from designated locations.

4. Performer unlocks outer and inner locks of closet. Performer and co-worker count drug dosages in boxes for each drug.

5. Performer adds actual count of supply of each drug on hand and tally of drug dosages signed out for by users, and compares with total that should be accounted for.

   If there is a discrepancy in the amounts, performer:

   a. Checks other control sheets for a misplaced signature; if so, asks co-worker involved to re-sign on proper sheet.
   b. Checks other boxes for a misplaced dosage of the drug; if so, replaces drug in proper box.

OK-RP:RR:RP

6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 128

This is page 2 of 2 for this task.

List Elements Fully

c. May ask co-workers whether anyone has used a narcotic drug without signing out for it; if so, asks co-worker involved to sign out at that time.

d. If performer cannot find cause of discrepancy, performer notifies supervisor. Records what the discrepancy was and date discovered on the proper control sheet.

e. Performer and co-worker sign tally sheet indicating the date and time of check.

6. Performer and co-worker compare tally of amount of each drug on hand against minimum amount that should be on hand as listed on control sheets. Performer notes which drugs must be reordered based on count, and amounts. Performer locks narcotic supply closet. If acting as witness, leaves at this point.

7. If any drugs are to be replenished, performer finds the narcotic control sheets corresponding to the drugs to be ordered. Fills out copies of requisition form for narcotics, and attaches requisition to the narcotics control sheets.

8. If drugs are to be restocked, performer brings the requisition forms and completed narcotic control sheets to the pharmacy. Signs control sheets in the presence of pharmacist. Performer witnesses as the pharmacist signs the requisition and control sheets.

9. Performer waits until the order is filled and checks that the order includes the drugs ordered in the proper amounts and that there is a narcotic control sheet for each drug ordered. Checks that sheets are dated, have the pharmacy code number, and are signed by the pharmacist.

List Elements Fully

10. Performer signs the requisition for narcotic drugs, indicating that drugs and narcotic control sheets were received.

11. Performer returns to narcotics closet and unlocks. Places box(es) of narcotic drugs in proper places in closet. Places new narcotic control sheet(s) in proper locations.

12. Performer locks the closet and returns the keys to designated co-worker or location.

TASK DESCRIPTION SHEET

Task Code No. 129

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Orders filled out for non-narcotic drugs and sterile equipment, based on standing orders, need determined after inventory check, check for expiration dates, and requests by RN's or MD's; copies of orders retained.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Supplies of non-narcotic drugs and sterile equipment; requisition form; reference file for outside orders; blank index file cards; pen; carbon paper; note book; par level lists

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

MD's; co-workers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking supply and ordering non-narcotic medicinals needed by department by filling out standing orders; taking inventory and ordering items below par levels or expired; noting or asking for requests for items; filling out requisition form or outside order card in duplicate; having expired medicinals returned and orders delivered or placed for pick up.

List Elements Fully

Performer checks the supply of non-narcotic medicinals (drugs and sterile equipment) as a result of:

- a. Regular procedure.
- b. When notified of shortage by co-workers.
- c. Own decision to do after noticing shortage.

1. Performer decides what to order and quantities in any or all of the following ways:
    - a. Performer has standing order for certain medicinals or sterile materials with amounts and frequency of order predetermined. Regularly fills out preprinted list or writes list on institutional requisition form.
    - b. Performer may receive request from MD or co-workers for items in short supply or to be newly ordered or may ask them if they have requests:
        - i) If item(s) are not regularly stocked in department but are available in pharmacy, performer adds to requisition sheet.
        - ii) If item is not kept in hospital pharmacy, performer obtains name of distributor or manufacturer:

          If item has been ordered before, performer obtains appropriate file card and copies information (name of

OK-RP;RR RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 129

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
product, manufacturer or distributor and quantity desired) onto blank index card or order form. If item has not been ordered before, performer questions co-worker ordering about supplier; fills out a reference card for placement in the file box; also makes out order card or form as above. c. Performer takes inventory of drugs and sterile equipment on hand, noting which supplies are below "par" or desired minimum levels, and any that have expired. Performer assesses whether supplies are adequate by referring to list of "par" levels if available, or from labels with par levels on shelves, or judges from own experience on usage and needs. Performer adds name of items and quantities needed to requisition list, or checks off items and writes in quantities. 2. Performer collects expired drugs and equipment and arranges to have them returned to pharmacy or central supply by self or co-worker. 3. When requisition form and/or outside order card are completed in duplicate, performer signs and takes to proper location (such as pharmacy or secretary), or has co-worker deliver, or places for pickup. 4. Performer retains duplicate copy of orders, or records orders in notebook.	

TASK DESCRIPTION SHEET

Task Code No. 131

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Assignments decided on and sheet made out to cover work loads; adjustments made to cover lateness or absences.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Information on areas to be covered and vacation time, days off, work loads and attendance; pen; assignment sheet

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Staff members to be assigned work schedules; supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Making assignments of staff to work areas, procedures, and/or MD's and/or vacations and lunch hours by assessing number of staff available, work load needs, need for rotation, considering experience and preferences; making assignments; filling out assignment sheet; placing for typing and/or posting; adjusting assignments to cover absences or latenesses on individual days.

List Elements Fully

Performer periodically makes out and/or modifies assignment sheets for subordinate staff and self. May do any or all of the following:

1. Performer obtains information on requested vacation times, regular days off for staff, and/or lunch hour and break preferences of staff.

2. Assigns staff to specific treatment and/or examination rooms, (or specific MD's), and/or types of procedures for each day, as appropriate. Considers number of areas to be covered, expected loads, durations, and the available staff expected. Considers the degree of supervision required by staff persons. If appropriate, sees that staff are properly rotated in assignments.

3. Assigns lunch hours and breaks so that all functions are covered at all times; considers staff's expressed preferences.

4. Fills out daily assignment sheet with all relevant information and posts or places for typing and/or posting.

5. On any given day, performer receives information on absences. May reassign any staff member to duties other than those originally posted to cover for late or absent staff members. May ask super-

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 131

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
visor to request additional help; may assign self to cover; may decide to request additional help from administration. 6. May note absences or latenesses.	

TASK DESCRIPTION SHEET

Task Code No. 132

This is page 1 of 1 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Request made orally and/or requisition filled out for repair or replacement of equipment or for services of a hospital department; order placed for delivery.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Pen; requisition forms; telephone; objects needing repair or service

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. **If "Yes" to q. 3:** Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Requesting repair, replacement or other services of another hospital department orally and/or filling out requisition, by reviewing request, notifying department by phone, relaying necessary information; filling out appropriate requisition form, placing for pick-up or delivery.

List Elements Fully

Co-workers may inform performer of need to have furniture or equipment repaired, of need to replace equipment and supplies handled by another department, or the need for the services of another department.

1. Performer obtains any necessary information from co-worker or may examine situation personally and assess need.

2. Performer calls appropriate hospital department on telephone. Requests repair or replacement of equipment or supplies, or asks for services of department.

3. Performer may fill out appropriate requisition form with information needed. May make duplicate and retain or file.

4. Gives requisition to co-worker for delivery to appropriate department or places for pickup.

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET

Task Code No. 133

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Written/MD orders obtained for subcutaneous or intramuscular injection; patient screened for contraindications; decision made whether to inject; if not, reported; injection prepared; quantity checked; patient explained use and side effects; injection administered; narcotic forms filled out; record entered; side effects reported.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD's orders, or patient's treatment and medication check list, or requisition sheet; narcotic control form, wasted narcotic control form; pen; medications in supply areas; key to narcotics supply; sterile needles, syringes, caps, and bottles; alcohol, swab; bandaids; syringe destruction device; measuring implements

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to receive subcutaneous or intramuscular injection; accompanying adult if pediatric patient; MD; co-workers; supervisor.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Administering subcutaneous or intramuscular injection for any patient according to MD's orders after having quantity checked by obtaining medication and filling sterile syringes with proper amount of medications and having prepared quantity checked; checking for contraindications and informing MD if type or dosage is in doubt; advising patient of purpose and side effects of drugs; choosing injection site; injecting according to sterile procedure; filling out and signing narcotic regulation forms; recording medication given; checking and reporting side effects.

List Elements Fully

Performer administers medication given as intramuscular or subcutaneous injection.

1. Performer is requested to inject patient with medication or reads patient's requisition sheet, or treatment and medication check list.

   If MD's oral orders call for narcotic or regulated drug, performer may fill out MD's prescription on appropriate form or medication card and obtain MD's signature.

2. If MD's orders call for narcotics or regulated drugs, obtains key to locked supply closet;selects proper medication;relocks after medication has been obtained. Performer goes to appropriate unlocked supply areas for other medications.

   (May have order filled by appropriate co-worker. If so, checks amount.)

3. Performer checks expiration date on medication;checks for signs of deterioration; arranges to discard if appropriate. Selects currently usable medication.

4. Performer prepares medication for injection:

   a. If the medication is prepackaged,performer inserts sterile needle through stopper of bottle;injects amount of air equal to the

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 133

This is page 2 of 3 for this task.

List Elements Fully

volume of medication to be withdrawn; draws up into syringe; expels air bubbles from syringe;covers point of needle with sterile cap. If prepacked with syringe and needle, expels air and caps.

b. If the medication is not prepackaged, prepares as follows:
   - i) If medication is a powder, performer obtains sterile bottle containing a given amount of powder: using sterile syringe,injects air equal to the amount of medication to be administered into bottle of sterile water; draws up indicated amount of sterile water into syringe to dissolve powder; squirts this back into bottle with powder; mixes with powder; turns bottle over and draws appropriate amount of mixture into syringe. Expels air; covers tip of needle with sterile cap.
   - ii) If medication is a liquid, performer uses sterile needle and sterile syringe; injects appropriate amount of air and draws up proper amount of medication into syringe; expels air;covers tip of needle with sterile cap.

5. Performer has MD or supervisor check amount. Readjusts if necessary.

6. Performer brings prepared injection to patient. Performer explains name and purpose of injection and possible side effects if any. Performer checks patient about allergy to the medication and considers whether there are any possible mistakes or contraindications in regard to the dosage ordered.

7. If performer considers the type of medication or dosage to be inappropriate, already given, or possibly in error, or if performer discovers allergy, performer may decide not to inject. Reports this to ordering physician. (Performer may refuse to inject.)

List Elements Fully

8. If performer decides to inject as ordered and site of injection has not been specified, performer decides where to inject based on size of dosage, type of medication, patient's age and size.

9. Uncovers the part of body to be injected or asks patient (or adult with child) to uncover. Wipes skin with alcohol swab. Inserts needle. Pulls back slightly on plunger; checks that no blood appears. Injects medication. Withdraws needle and places in appropriate container. May wipe puncture with alcohol swab. May apply band-aid. If blood appears, removes needle;reinserts with fresh needle and cares for puncture site.

10. If warranted by type of drug or newness of patient's exposure to drug, asks patient to remain to see if there are any side effects or allergic reactions. Calls MD if this occurs.

11. Performer shows any leftover amount of narcotic or regulated drug to MD or supervisor and discards.

    Destroys used disposable syringe by breaking it into unusable pieces with syringe destruction device. Discards pieces and used swab.

12. If medication was narcotic or regulated drug, performer fills out narcotics control sheet with information called for, such as date, dosage removed from supply, dosage administered, patient's identification, and time dosage was administered. Signs sheet.

    If any amount of the narcotic or regulated drug was accidentally wasted by dropping or contamination, performer

TASK DESCRIPTION SHEET (continued)

Task Code No. 133

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
signs out for the additional dosage needed. Performer also fills out a "lost narcotic" form. Indicates which narcotic or drug was wasted, date, time. Obtains supervisor's signature and signs form. 13. After the medication has been administered, performer records medication, dosage, time and date on requisition sheet, check list, order form, or immunization form, as appropriate, and signs name. May inform MD that medication was administered. 14. Performer attaches copy of "lost narcotic" form to narcotics control form if appropriate. Delivers copies of forms to appropriate locations. 15. Performer takes any contaminated narcotic or the remains of wasted narcotic or its container to pharmacy, with copy of appropriate form.	

TASK DESCRIPTION SHEET

Task Code No.- 134

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Data on patient services or instructional case record materials collected, entered in log book or record form and/or tallied; materials returned and/or placed for filing or use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's treatment chart, record forms, radiographs or requisition sheets; log book, billing book, tally sheet, or other record keeping forms; pen or pencil

3. Is there a recipient, respondent or co-worker involved in the task? Yes...( ) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers providing patient services and/or in charge of records

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Logging and/or tallying patient services and/or instructional case record materials for use in record keeping, billing or instruction by obtaining information to be logged and appropriate forms or log book; ascertaining the information to be entered and entering as appropriate; tallying; returning original records; placing log book, tally and/or forms for filing or use as appropriate.

List Elements Fully

Performer logs or tallies records of patient services or instructional case record materials on file for purposes of record keeping, billing and/or instruction as a result of:

a. Regular assignment.
b. Request.

1. Performer obtains information on the instructional case record materials and/or service to be logged or tallied by:
   a. Accumulating or obtaining report forms, radiographs, filled out requisition forms, or patients' treatment charts.
   b. Asking co-workers for quantitative information on the services provided for given patients.
   c. Obtaining patients' names and relevant records as appropriate.
   d. Keeping track of own work for purposes of logging or tallying own provision of services.

2. Performer obtains the appropriate log book(s) and/or record keeping forms such as billing forms.

3. Based on the information called for in the log book or record forms, performer looks up the required information from the accumulated treatment charts, requisitions, or reports. Performer may question co-worker to obtain information or contact appropriate clerical department.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 134

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
Performer enters such information as patient's name, identification number, attending physician, date, type of patient (in-patient or out-patient), diagnosis, details on the type of treatment or service, the amounts involved, and, if appropriate, the time involved, as called for, from the available information. Performer may record any referrals made. May record any relevant special notation. 4. Performer may tally totals of services performed for the day or for some given period of time and enter as appropriate. 5. Performer returns patient records as appropriate and places tally, record keeping form and/or log book for filing or processing.	

TASK DESCRIPTION SHEET

Task Code No. 135

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Treatment or examination room cleaned; stains wiped away with antiseptic; fresh paper or linens put on table; used disposable items discarded; others cleaned and/or returned to proper locations; decision made whether to arrange for housekeeping services.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Receptacles; used paper, linens, swabs, etc.; antiseptic solution; fresh treatment table paper or linens; laundry bag; receptacle

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Cleaning an examination or treatment room after use by throwing away disposable used materials; wiping away blood and stains using antiseptic solution; replacing linens on treatment table; replacing used or displaced materials; arranging for housekeeping service if needed; returning any documents left in room as appropriate.

List Elements Fully

Performer readies treatment or examination rooms for use after patient departs, as a result of:

a. Regular assignment.
b. Request.
c. Own decision to do.

1. Performer may don gown and gloves. Enters room. Throws away all used, disposable items such as alcohol swabs, gauze, cotton, etc. in disposable bag or receptacle. Removes linens or paper from examination or treatment table and discards as appropriate in bag.

   Performer may ask co-worker to wash some equipment in antiseptic solution or decides to do personally.

2. Performer cleans off blood, secretions, or other stains from examination table and surfaces of other equipment. Uses antiseptic solution and disposable cloth or towels. Discards solution and cloth or towels in appropriate receptacle after use.

   If room has been seriously soiled or many items have been contaminated, performer may ask co-worker to clean or may decide to call for housekeeping services.

3. After room has been cleaned, performer discards gown and gloves in laundry bag. Obtains fresh linens or paper for treatment table. Places on table and tucks in as ap-

OK-R2:RR:RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 135

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
propriate. Replaces items that were washed, used,or left out of place. 4. If appropriate, performer may take any documents or forms left in room to proper location.	

TASK DESCRIPTION SHEET

Task Code No. 136

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Delivered order for non-narcotic drugs or supplies checked, stored or delivered to individuals; missing items reported or reordered.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Delivered order for non-narcotic drugs or sterile equipment or general supplies; cart; requisition form or order cards; storage locations

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers; supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking and storing order for non-narcotic drugs and/or supplies by checking against order; notifying supply department or outside supplier of missing items; distributing to units, individuals, and/or storing in designated labeled locations.

List Elements Fully

Performer receives non-narcotic drugs, sterile equipment, or general supplies when they are delivered from storeroom, pharmacy, or from outside suppliers.

1. Performer has or obtains copy of order, or receives it from co-worker; obtains order card for outside orders.

2. Performer checks the supplies delivered against what is on the requisition form or card, noting reasons listed for any supplies which were not delivered.

   If any are not accounted for, calls supply room, pharmacy or distributor and reports what is missing.

   Performer may fill out new order and check when those supplies arrive, or missing supplies may be sent at once and checked as part of current order.

3. Performer opens boxes. Distributes contents to appropriate locations as follows:

   a. Personally distributes items ordered for, or at request of, specific individuals.
   b. May select appropriate parts of order for delivery to another unit and deliver or have delivered.
   c. Performer distributes materials by carrying or using cart. Goes to appropriate storage areas and/or examination or treatment

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 136

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
rooms. Places supplies into labeled containers, on labeled shelves, into labeled drawers as appropriate. 4. Performer disposes of empty boxes and copies of order forms which have been filled and delivered, as appropriate.	

TASK DESCRIPTION SHEET

Task Code No. 137

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Specimen or culture delivered to co-worker or location in lab or incubator; recorded as appropriate.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Prepared, labeled specimen(s), culture; lab slip(s); lab or incubator; record forms

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Delivering prepared specimens or cultures to lab or incubator by taking to co-worker, placing in designated place and/or recording.

List Elements Fully

Performer takes specimens or cultures to lab or incubator as a result of:

a. Regular assignment.
b. Request.
c. Own decision to do.

1. Checks that culture(s) or specimen(s) are properly labeled and have lab slip(s). If not, obtains from appropriate co-worker.

2. Takes prepared specimen(s) or culture and lab slip(s) to laboratory or incubator. Depending on departmental practice, performer:

   a. Gives to appropriate co-worker.
   b. Places in designated place (such as in incubator or on shelf or table).
   c. May record on form or in record book stating the MD ordering, patient's identification information, tests ordered, date and time.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 138

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Symptoms or concerns of patient indicating health problem observed or discussed and reported to physician or appropriate staff member.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

--

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; physician or staff member

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Reporting observed symptoms and concerns of any patient to physician or staff member by observing patient's behavior, engaging in conversation; verbally reporting information considered to be helpful for patient's care to physician or appropriate staff member.

List Elements Fully

Performer must be alert to notice any symptoms or concerns manifested by the patient which should be brought to the attention of physician or staff.

1. As performer interacts with patient before and/or after patient has seen physician, performer notes conditions, symptoms, or behavior which should be brought to physician's attention, such as shortness of breath, sudden weakness, flushing, rash, tremors.

2. Notes whether, in conversation, patient mentions symptoms or worries related to health, or concerns which would indicate information helpful to physician in caring for patient.

3. Reports verbally to physician or appropriate staff member who would relay information.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 143

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient reassured; materials assembled; patient prepared; meatus and genital area cleansed; retension catheter inserted into urethra and bladder; urine specimen collected; MD informed when patient is ready and when catheter is held in place.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD's orders, or x-ray requisition sheet, or check list; sheet; sterile towel; lamp; sterile gloves; kit with antiseptic solution and sterile specimen containers; sterile syringe, sterile water, sterile catheter (appropriate for procedure); sterile lubricant; sterile swabs or cotton balls, gauze; sterile forceps; sterile specimen container; clamp

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any female patient to have urethral catheter inserted; physician

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Catheterizing any female urethra as ordered by reassuring patient; assembling sterile equipment; preparing patient using sterile procedures; inserting catheter into urethra and bladder; reassuring patient or reporting excessive pain; collecting urine specimen, if appropriate; informing physician when catheter is inserted; telling MD when (if approriate) catheter is held in place.

List Elements Fully

Performer catheterizes a female patient's urethra as a result of a request or assignment, such as in preparation for retrograde voiding cystourethrography or to obtain sterile urine sample.

1. Performer receives MD's orders or reads x-ray requisition form or check list.

2. If not already done, joins patient in designated room. Talks with patient and explains what will be done, explaining what the patient will experience. Reassures, especially with pediatric patient.

3. If not already done, performer selects the appropriate size female catheter based on the patient's age and size.

4. Performer assembles materials or has sterile tray prepared and placed near patient.

5. Performer has patient lie on table in supine position. Removes any lower garments. Performer drapes patient and places patient's legs in appropriate position (as for pelvic examination). Arranges sheet so that it can be folded back to uncover genital area when ready to insert catheter. Places and adjusts lamp.

6. Performer washes hands. Using aseptic technique, uncovers sterile tray, using hands for

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 143

This is page 2 of 2 for this task.

List Elements Fully

outer wrapper and transfer forceps for contents, or uses sterile gloves:

a. Prepares antiseptic solution from sterile kit using two sterile collection containers (graduated).
b. Fills sterile syringe with sterile water, and lays aside.
c. Opens bag containing sterile catheter.
d. Squeezes sterile petroleum jelly or other sterile lubricant on sterile gauze sponge and places within reach.

7. Performer prepares patient to have catheter inserted:

   a. Explains what will occur and that patient may experience cold and wetness.
   b. Folds back drape and exposes pubic area. Encourages patient to relax, place hands above head, and breathe regularly. Adjusts light.
   c. Performer places emesis basin for use.
   d. Places sterile towel between thighs.
   e. Puts on sterile gloves (or a fresh pair).
   f. Performer checks catheter for defects by injecting sterile water into the balloon lumen in appropriate amount. Deflates balloon and empties water into basin, maintaining sterility of the catheter. Replaces on tray.
   g. Performer cleanses area by separating the labia with gloved hand and exposing the urinary meatus. Holds the labia apart with one hand. Saturates cotton balls in antiseptic solution and cleanses the meatus and vestibule from above, downward, discarding cotton balls as they are used. (Performer uses forceps or changes gloves after cleansing process.)Performer places sterile basin on sterile towel close to buttocks, below separated labia.

List Elements Fully

8. Performer inserts catheter using sterile glove. Picks up appropriate size catheter and lubricates it with sterile lubricant. May clamp off the drainage lumen.

   a. Inserts catheter into meatus appropriate distance or until some urine flows. Allows urine to flow out into sterile basin through catheter.
   b. Performer may massage the patient's abdomen and exert pressure to induce voiding.
   c. If performer finds that patient is experiencing severe pain or encounters much resistance, performer terminates attempt to catheterize; informs the physician in charge.
   d. If there is a urine flow and a specimen is to be collected, performer allows an initial flow into basin and then directs catheter into a sterile specimen bottle and fills with appropriate amount. Avoids touching the catheter with bottle. Places specimen on tray and covers with sterile cap. Has this properly labeled.

9. Performer tells physician when patient is ready. Checks while physician ejects sterile water from syringe into catheter, thus inflating small bulb on end to hold catheter in place. Tells physician when catheter is being held in place.

TASK DESCRIPTION SHEET

Task Code No. 145

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Treatment or examination materials and equipment washed, inspected, wrapped, and labeled; placed for autoclaving.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Soiled or used treatment or examination instruments and parts; water; basin(s); antiseptic solution(s); gauze or towels; syringe; destruct clip for needles; small pads; autoclave paper and tape, or toweling and autoclave tape, or non-sterile packet indicator; labels; receptacle; marking pen; cart

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing treatment or examination equipment for sterilization in autoclave by washing, soaking, drying; inspecting for damage or missing parts; assembling into individual sets and packets with autoclave paper or toweling and tape; labeling packets with contents and missing parts; assembling into packets by work area with autoclave paper or toweling and tape; labeling and taking to be autoclaved.

List Elements Fully

Performer prepares equipment for sterilization in autoclave as a result of:

a. Regular assignment.
b. When soiled equipment has accumulated or sterile equipment is in short supply.

1. Performer gathers soiled equipment that will be sterilized by autoclave from areas assigned. Takes to appropriate work station.

2. At station, disassembles equipment such as syringes, catheters, etc. Washes all parts with water.

3. Separates equipment based on whether more than one antiseptic solution is to be used; places parts in appropriate basin(s). Fills basin(s) with designated antiseptic solution(s) depending on parts involved. Allows to soak for designated time (may be overnight).

4. After soaking, empties basins and rinses equipment.

5. Dries each piece with gauze or towel. Uses syringe filled with air to flush water from inaccessible parts and other syringes.

6. During drying, performer notes whether any equipment seems defective or damaged. May ask opinion of co-worker. Throws away parts judged to be broken. Places broken or damaged needles into dis-

OK-RP:RR:RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 145

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
posable portion of destruct clip. When that portion of clip has full capacity of damaged needles, throws it into receptacle. 7. Performer attaches undamaged needles to pads by taking one or more stitches through pad with each needle. 8. Performer wraps all the pieces of an individual equipment set together in autoclave paper or appropriate toweling. Writes out label indicating contents with marking pen. If parts are missing or have been discarded due to damage, notes what is missing on label. Seals each packet with autoclave tape (or regular tape if autoclave paper is used) and attaches label to each packet. If autoclave tape is not used at the institution, performer adds an indicator used at the institution which distinguishes non-sterile packets from sterile packets. Wraps, tapes, and labels single unit equipment in separate packets as above. 9. Separates packets into groups according to room or work area in which each belongs. Wraps packets for each room into one individual packet for each, using autoclave paper or toweling. Tapes each large packet and labels with name or number of designated room or area and list of missing parts. 10. At appropriate time places packets on cart and transports to designated area for autoclaving (central supply.)	

TASK DESCRIPTION SHEET

Task Code No. 147

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

   Modifications in or new technical factors posted on technique charts.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

   Technique charts; pen; paper; tape

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

   Radiologists; radiologic technologists

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

   Preparing or changing technique charts for specific x-ray and fluoroscopic equipment on orders(to reflect in-house experience, policy, new requirements or to compensate for deteriorating output)by checking required new information on technical factors, the equipment involved,and the projections; entering or changing information on existing or new technique charts; informing technologists of new information or changes.

List Elements Fully

Performer fills in or modifies technique charts as ordered.

1. Performer may be asked to prepare a new technique chart based on in-house experience and requirements,or may be asked to modify a standard technique chart provided by the manufacturer of fluoroscopic and/or x-ray equipment based on in-house requirements. Performer receives the request(s) for any of the following reasons:

   a. A new piece of equipment may be installed;radiologist(s) to use equipment may indicate the technical factors to use for the various examinations to be performed with the equipment by body part, as appropriate.
   b. A meeting of the department may result in a decision to utilize new factors in one or more examinations as a result of policy to improve diagnostic quality and/or reduce patient exposure. New or changed projections may be involved.
   c. A new examination may be undertaken;radiologist(s) involved may indicate the projections and the technique (kVp,mA,time,distance and accessories) to use for the examination with the machine.
   d. A member of the staff of radiologists may require a modification of technical factors for specific exami-

DK-RP;RR;RR

6 . Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 147

This is page 2 of 2 for this task.

List Elements Fully

nations to suit personal standards for diagnostic quality (such as a change of the contrast scale).

e. Radiologic technologist(s) may indicate results of calibration tests and need to compensate on technique chart for deterioration in the output of a specific machine such as in kilovoltage (kVp), milliamperage (mA) or timer settings. (Radiologist will have been asked to approve a major change.)

f. Radiologic technologist(s) may note continued dissatisfaction of radiologist(s) with quality of radiographs associated with a given machine set at given technical factors and may suggest a change in technique chart to reflect the observed preferences.

2. Performer checks the information necessary to prepare or modify the technique chart for each piece of equipment involved:

   a. Notes which equipment, which examination(s), or body part(s) are involved.
   b. Notes the specific orders for centimeter thickness, grid ratio, focal-film distance, kVp, milliamperage-second (mAs) (or mA and time), focal spot size, type and speed of film, and use of image intensifying screens as appropriate. If any needed information is missing or unclear performer checks with the appropriate radiologist or radiologic technologist.
   c. Performer may perform calculations appropriate for orders calling for percentage changes in one or more factors.
   d. Performer checks the new technical factors on the tube rating chart for the focal spot size involved to

List Elements Fully

make sure that factors are within safe limits.

i) If factors exceed limits performer may substitute reduced mA and increased time to produce desired mAs.

ii) Performer may report incompatible factors to radiologist and act on new orders as appropriate.

e. Performer notes special instructions to deal with tissue and pathology effects, pediatric patients, obese patients.

f. Performer may note special instructions calling for a new set or changes in standard projections for specific examination(s).

3. Performer uses a marking pen and changes or adds appropriate information to the technique charts. May decide to fill out new technique chart. If so, uses blank chart; copies relevant information from old chart and enters new instructions.

4. Performer may verbally inform appropriate staff of changes, and/or may post a sign informing staff that changes have been made on technique charts, indicating the ones involved. May also note for announcement at meeting of technologists.

TASK DESCRIPTION SHEET

Task Code No. 153

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Materials handed to MD or co-worker; patient given reassurance; blood wiped away; patient restrained; equipment turned on or off or adjusted as ordered.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Materials, solutions, equipment used in special procedures; sterile gloves; sterile gauze

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Physician or co-worker; any patient

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Assisting physician or co-worker in special examination or treatment procedures by handing materials called for, turning equipment on or off as ordered, wiping away blood, reassuring and comforting patient, or restraining patient as requested.

List Elements Fully

Performer may be asked to assist physician or co-worker in treatment or examination procedures.

1. Performer goes to room assigned. May go and get any equipment as requested.
2. As physician or co-worker asks for specific items such as instruments, solutions, and materials (which are generally familiar or labeled) performer hands these as requested. May use sterile gloves if required.
3. If requested, will turn equipment on or off or adjust as ordered.
4. If requested, performer will use sterile gauze and wipe away excess blood from designated areas of patient's body or equipment. May use sterile gloves.
5. If requested, performer will attend to patient's comfort by reassuring, helping to make comfortable.
6. If requested, performer may help to restrain or immobilize patient or prevent from falling off table.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 155

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Urine specimen obtained from patient; urine in specimen bottle labeled and given to ordering MD or placed to go to lab.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Urinal, bed pan or other container for urine; specimen bottle, label, pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; adult accompanying pediatric patient; MD or co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Obtaining urine specimen on orders by explaining to patient how to provide or assisting; labeling specimen container; giving to ordering MD or co-worker or arranging to send to lab.

List Elements Fully

Performer may be asked to obtain a specimen of urine from a patient.

1. Explains to patient how to provide specimen, such as urinate into urinal, bed pan or sterilized container, or explains to accompanying adult how to obtain specimen from child.

2. May decide to assist patient in bathroom.

3. Prepares label for specimen by writing out patient's name, ID no., and time or other information called for.

   When patient returns with specimen (or performer obtains), performer labels container, or pours urine into container, and attaches label.

4. If requested, shows urine specimen to ordering MD or co-worker; otherwise has co-worker take to lab or decides to take personally; may discard original container and remaining urine, if appropriate.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 156

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Old bandage removed; condition of wound assessed; suspicious symptoms reported; wound or opening irrigated, cleaned, medicated and/or dressed; record entered.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD's orders, or patient's requisition sheet, or check list; scissors, sterile syringe, saline solution; container; basin; antiseptic solution, sterile gauze; sterile gloves; medication as ordered; dressings, pads, tape, vaseline gauze, bandages; sterile forceps; ace bandage, clips; sling; pen; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient with wound, burn or catheter opening; physician; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Irrigating, cleaning, dressing or redressing any patient's wound, burn or opening for catheter as ordered by removing old dressing, noting condition of wound and reporting suspicious symptoms; irrigating by squirting or pouring appropriate solution; cleansing with appropriate solution; applying medication and dressing as ordered; recording.

List Elements Fully

Performer irrigates, cleans, medicates and bandages a pt.'s wound or the opening around a catheter as a result of:

a. MD's orders.
b. Request of co-worker.
c. Regular assignment.
d. Own decision to do after seeing patient.

1. As appropriate, reviews written orders on what to do, medication, wrapping and dressing: reads check list or requisition sheet or receives verbal instructions, or performer asks physician for instructions.

2. As appropriate, performer goes to patient in designated location. Explains what is to be done.

3. Obtains materials and medication or has these brought by subordinate.

4. If old bandage is on, uses appropriate instrument to remove; carefully tears off if adhesive tape is involved.

5. May evaluate condition of wound or opening. Notifies MD if wound looks suspicious or if performer is unsure of what to do. May receive additional orders on medication or dressing.

6. If wound or opening is to be irrigated, performer decides whether to use syringe or pour sterile water or

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 156

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
saline solution on wound or area around catheter. Pours or squirts fluid on wound or external opening to clean out foreign matter. May irrigate catheter by pouring or squirting solution at proper temperature into opening and allowing water and matter to flow out into basin. 7. If wound or opening is to be cleaned, uses antiseptic solution and gauze. If wound is a burn, uses saline solution. May use sterile gloves with some wounds or burns. 8. Applies medication as per physician's orders or leaves unmedicated if so ordered. 9. If dressing is called for, applies sterile gauze, pads, tape or bandaids as required. If burn, uses vaseline gauze. Wraps with gauze bandage tightly or loosely as called for. May use sterile forceps to apply dressing. If limb is involved, may use ace bandage and clips. May apply sling. 10. Records condition of wound, what was done and time on patient's chart or check list. May report verbally to MD that task is completed.	

TASK DESCRIPTION SHEET

Task Code No. 158

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Nursing or technologist staff person's work in patient care activities (in diagnostic radiography) observed, evaluated, interrupted if necessary; evaluation and need for training noted and/or reported; permission asked to teach or have teaching done.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Pen; paper

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Subordinates or co-workers in patient care activities in diagnostic radiography: (nurse aides, RN's, LPN's, technologists); supervisors of subordinates or co-workers; any patients in X-ray department

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Informally observing and evaluating patient care work of nursing and technologist staff in diagnostic radiography, and deciding whether training is needed by observing, evaluating; interrupting task and/or reporting or noting conclusions; asking to teach or that individual be taught in deficient areas.

List Elements Fully

Performer informally observes the work of subordinates and/or technologist co-workers in patient care procedures and use of related equipment for diagnostic radiography and decides if training is needed.

1. Performer observes subordinates or co-workers work in patient care activities:
   a. While working with the staff person.
   b. While supervising the staff person.
   c. While performing administrative functions.
   d. At the request of staff person or at request of supervisor of staff person.
   e. As part of informal spot check procedure.
2. Performer explains presence to any patients involved if appropriate, while observing.
3. Performer notes how the staff person is carrying out the work assignment(s) involved.

   Decides whether the activity is being done properly, if there is a need to demonstrate the procedure, explain an approach or attitude, or both.

   Decides whether to interrupt procedure and take over. If so, performer does the interrupted procedure as a regular task.
4. Performer makes written or mental note of evaluation.

OK-RP;RR;RR

6. Check here if this is a master sheet..(✓)

This is new assignment to this number.

Task Code No. 158

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
5. If performer decides that training is needed, performer may decide: a. To teach the staff person at that point or explain how to improve. b. To explain to staff person's supervisor that training is needed and request permission to teach or ask that teaching be provided.	

TASK DESCRIPTION SHEET

Task Code No. 163

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Report form such as for cancellation filled out as ordered by MD and with patient's identification information; physician's check and signature obtained; form placed for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Institutional report forms, patient identification information such as on requisition sheet; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Physician; staff person

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Filling out institutional report form (such as for cancellation) as ordered by MD, by obtaining appropriate form as ordered, filling in patient's identification information; filling in or checking categories as directed by MD; having form checked and signed by MD; placing for pick up or use.

List Elements Fully

Performer prepares cancellation and other report forms as directed by a physician when requested according to institutional procedures.

1. Performer is told to prepare a cancellation form or other institutional form which can be filled in and completed as directed by physician, such as forms with multiple choice categories to select from.
2. Performer may obtain the appropriate form as ordered by physician. Fills in the patient identification information as indicated on designated requisition sheet or as given by patient or physician.
3. Performer may enter or check off the categories as selected by physician (such as reasons for cancellation).
4. When completed, performer presents form to physician for checking and physician's signature. Makes any changes as ordered. Checks for signature.
5. Performer brings the filled-out form to appropriate location or staff person such as receptionist.

OK-RP:RR;RR

6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET

Task Code No. 164

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Labels and forms filled out with patient's identification information as called for, in anticipation of need or as requested; placed for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's chart, requisition form or check list; blank forms, labels etc.; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Filling out patient identification information on labels and forms in anticipation of need or as requested, by estimating need or referring to standard orders or request; getting information; filling in information; placing for use.

List Elements Fully

Performer prepares labels and/or forms for use with specimens, cultures or to be filled out by MD in anticipation of need in examinations or treatments as a result of:

a. Regular assignment.
b. Request.
c. Own decision.

1. Performer may review what procedures have been ordered for patient, or may have standard list of what labels and forms will be needed or will receive oral request.

2. Performer obtains the labels and/or forms that will be needed, and other materials requiring identification information.

3. Performer obtains identification information from patient's chart, requisition form, or check list.

4. Performer fills in the identification information needed on the assembled materials.

5. Places forms for MD's use; places labels in appropriate locations such as specimen containers.

6. May inform co-worker when ready, if appropriate.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 165

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Attendance recorded; notation made on excessive absenteeism, lateness, or abuse of lunch or break times; notation recorded or report made to supervisor on abuse(s).

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Attendance sheets; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Subordinate staff members; supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Keeping attendance records and recording or reporting excessive lateness and/or absenteeism by recording attendance as appropriate; noting whether there is excessive absenteeism, lateness, or abuse of lunch or break times; deciding to discuss or reporting to supervisor.

List Elements Fully

Performer keeps track of subordinate staff persons' attendance, and reports or records excesses.

1. Performer checks and/or records the attendance and latenesses of staff members on an attendance sheet.
2. Performer may periodically note whether staff members have been excessively late, absent, or abusive of lunch hour or break times, based on given standards.
3. If a staff member has been excessively late or absent, or has been abusive of lunch or break times, may make a note to raise this at a personal meeting with subordinate, or informs appropriate supervisor, depending on institutional procedures.

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET

Task Code No. 166

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Treatment or examination room prepared for isolation technique; patient brought; used materials discarded and room cleaned with decontamination procedures; patient returned

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's requisition form or check list;screen and/or isolation sign; treatment couch mattresses, linens;sterile gowns,masks, gloves;paper towels; cart with materials for procedure; laundry bags; disposal receptacles with bags;hand washing equipment;surface covering;basin;germicide detergent; utensils; toilet or sink;disinfection solution and cleaning equipment.

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers;patient with infections or communicable condition; nursing personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Using isolation and decontamination techniques to prepare examination or treatment room or area and clean up afterwards for patient with infectious or communicable condition by preparing sterile materials for use; preparing for disposal of materials; arranging for self and staff to wear and properly discard sterile mask, gown, gloves; transporting patient; discarding contaminated materials; cleaning treatment or examination room.

List Elements Fully

Performer prepares for examination and/or treatment of patient requiring isolation technique and cleans up afterward as a result of:

a. Request or decision to do.
b. Regular assignment in conjunction with other tasks.

1. Performer notes on requisition form or is told when a patient with an infectious or communicable condition is to be dealt with in examination or treatment room or in isolation area. May do any or all of the following.

2. Performer prepares examination or treatment room or isolation area as appropriate:

   a. Performer has the materials to be used for the procedure placed on a separate cart or decides to do personally.
   b. If appropriate, performer screens off unit and/or attaches "isolation" sign to entrance of area.
   c. Performer has treatment couch prepared with fresh, disposable linen or decides to do personally.
   d. Places laundry bag marked for contaminated linen and step-on can, lined with plastic or a paper bag, near the exit.
   e. Makes sure that there is immediately accessible to staff who will be involved and outside of unit:

      i) Clean mattress and/or linens.

OK-RP:RR:RR

6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 166

This is page 2 of 3 for this task.

List Elements Fully

ii) Clean gowns, disposable masks, gloves, paper towels, disposable bags.
iii) Hand washing unit or sink.

f. Places appropriate protective covering on table and counter surfaces for temporary placement of contaminated utensils or equipment. Provides basin of germicide detergent solution for immersion of contaminated articles.

3. Performer prepares self for patient and makes sure that other staff observe the following:

   a. Removes rings and watches.
   b. Observes proper hand washing procedures with lather and friction for appropriate amount of time.
   c. If appropriate, dons mask, fitting properly so that it will not need to be readjusted.
   d. Dons gown, checking that there are no holes. Ties at neck and back or buttons.
   e. If appropriate, puts on disposable gloves, covering cuffs of gown.

4. If performer is to bring patient into treatment or examination room, performer dons sterile mask, gown and gloves; goes to location in which patient is waiting.

   a. Performer checks patient's identity against requisition sheet name and wheels patient into treatment or examination room area.
   b. From this point on, performer behaves as though performer has been contaminated, and does not handle items which are to be used in "clean" condition. If performer requires "clean" items, has these handed into unit area by uncontaminated co-worker outside area.

List Elements Fully

5. Performer discards contaminated materials after treatment or examination as follows:

   a. Performer places contaminated materials and equipment into basin with germicide detergent or into lined step-on can.
   b. Performer pours out liquid wastes or water into toilet, being careful to avoid splashing. Rinses utensils, discards rinse water, and places utensils in basin. Uses paper towels when handling faucets and/or flush levers.
   c. Performer removes surface protectors and disposes of these in can.
   d. Performer places bag with contaminated wastes into clean bag for disposal. Arranges for immediate sanitation.
   e. Performer removes linens and mattress and places in laundry bag for disposal.
   f. Performer removes mask and discards in step-on can. Performer removes gown and discards in bag. Removes gloves and discards in step-on can.
   g. Performer washes hands when completed, following appropriate lather and scrub procedures.

6. If performer is to return patient to any other area, dons sterile mask, gown, and gloves outside unit, transports patient, and then discards mask, gown, and gloves after delivery of patient to next designated location.

7. If performer is to clean area after use, performer wears mask, gown, and gloves and carries out the following steps:

TASK DESCRIPTION SHEET (continued)

Task Code No. 166

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
a. Makes sure all disposable items are emptied into disposable bag in waste receptacle. b. Damp dusts all furniture and equipment surfaces with disinfectant solution in basin. Rinses cloth frequently. c. After cleaning disposes of solution in flush toilet. Washes and sanitizes basin. Discards cloth in waste receptacle. d. Has floors cleaned with disinfectant solution or does so personally. Discards floor cleaning equipment as appropriate, making sure it will not be used in uncontaminated areas. e. After cleaning removes mask, gown and gloves and washes hands as appropriate. f. Performer has area aired and prepared with fresh materials and linens or decides to do personally. Removes isolation sign and/or screen if unit is to be returned to regular use.	

TASK DESCRIPTION SHEET

Task Code No. 167

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Intensifying screens cleaned or discarded; replaced in cassettes; record made of cleaning.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Unloaded cassettes; antistatic cloth or brush; commercial screen cleaner or mild soap,warm water;basin;clean cloths or cotton;marking pen;work bench;intensifying screens;index card file and/or markers on cassettes

3. Is there a recipient, respondent or co-worker involved in the task? Yes...( ) No...(x)

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Inspecting and cleaning intensifying screens in cassette holders by checking dates of last cleaning; removing screens; using antistatic brush; using cleaner on cloth and wiping surfaces; drying; replacing damaged screens; reinserting screens in cassettes according to sizes and speeds; recording cleaning dates.

List Elements Fully

Performer cleans the intensifying screens of cassette x-ray film holders periodically or as a result of decision to do, or request.

1. Performer obtains unloaded cassettes and materials for cleaning:
    a. If unloaded cassettes are stored in darkroom, performer goes to darkroom.
        i) Does not enter while red light is on; if open, knocks to make sure that room is empty or can be entered.
        ii) Makes sure that no white light is shining in darkroom from any source and that safelight is on or makes sure that no unexposed film is in the open before turning on lights.
    b. Performer obtains unloaded cassettes of various sizes and materials to clean intensifying screens such as antistatic cloth or brush, appropriate cleaning solution (commercial screen cleaner or warm water and mild soap),cloth or cotton, marking pen. Places materials on clean work bench away from processing chemicals. If appropriate, mixes solution of mild soap and warm water.
2. Performer inspects the cassettes and selects those that now require cleaning and examining:

OK-RP;RR ;RR

6 . Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 167

This is page 2 of 2 for this task.

List Elements Fully

- a. Checks each cassette number against record on cassette (or in file) of date of last cleaning. Selects those cassettes for which the most recent cleaning dates show need for recleaning (such as elapse of a minimum period). Replaces other unloaded cassettes in storage area.
- b. Performer may sort cassettes by size and intensifying screen speed. (Performer notes speed of screen by referring to the identification system in use, such as lead marking numbers and letters on cassette.)
- c. Performer may obtain new intensifying screens of appropriate size and speed if they may be needed to replace old or damaged screens in the cassettes.

3. Performer inspects and cleans intensifying screens as follows:

   - a. Performer releases the lock bar of one empty cassette at a time if locked, and opens the cassette.
   - b. Performer slides out each intensifying screen mounted within the cassette on the front and back sections and inspects.
   - c. If there is lint on the screen, performer removes by using a special antistatic brush or cloth.
   - d. If there are contaminating foreign objects on the screen surface performer moistens cotton or cloth with the commercial screen cleaner or mild soap and water solution. (Does not spray directly on surface.) Makes sure cloth is not excessively wet by squeezing out liquid before using.
     - i) Lightly rubs the screen surface with a crosswise motion.
     - ii) Removes excess cleaner at once with dry cloth or cotton. May use antistatic brush as well.

List Elements Fully

     - iii) Performer places each screen for air drying. May lean screens against counter.
   - e. If any screen is damaged or excessively stained, performer may discard screen and decide to replace with a new screen of the same size and speed.

4. Performer reloads cassettes with dry, cleaned screens or new screens:

   - a. Makes sure to match the screen speed and size to the appropriate cassette based on coding (two screens per cassette except for single-screen cassettes).
   - b. Slides each screen into its retainer in cassette.

5. Performer marks cassette card with new date of cleaning or replacement or enters on index card for cassette as appropriate.

6. Places cassettes in appropriate storage area.

7. If in darkroom, performer makes sure that no unexposed films are in the open before leaving.

8. Performer may place or deliver damaged screens for repair work.

TASK DESCRIPTION SHEET

Task Code No. 173

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

X-ray machine timer (except phototimers) tested by use of spinning top test; exposures of top spinning assessed for accuracy of timer; repair service informed of defective timer; machine shut down, or compensating timer adjustments posted and/or reported; record placed for filing.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

X-ray machine control panel, table, x-ray tube; cassette; top; lead sheeting; lead numerals and tape or other film marker; view boxes; pen or pencil; technique chart(s); telephone; out-of-order sign; tube rating chart

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers; repair service personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking accuracy of x-ray machine timers (except phototimers) with spinning top test by setting appropriate technical factors; preparing cassette; spinning the top on cassette and exposing; repeating an appropriate number of times; interpreting processed radiographs based on number of dots appropriate for given exposure time and the known current impulses for rectified current; arranging for repair; shutting down unit or posting compensatory timer settings for use until repair is made; recording as appropriate and placing radiographs for filing.

List Elements Fully

Performer checks whether exposure settings of x-ray machine timer(s) (except phototimers) correspond to the actual exposure time produced, by performing spinning top test as a result of:

a. Assignment to perform periodically.
b. Request to investigate trouble reported or noted.
c. Decision to do.

1. Performer checks timer for any x-ray unit by entering control room for designated machine:
    a. Checks to see that indicator light shows that x-ray machine is ready for use.
    b. Selects and sets technical factors for test:
        i) Sets timer for period up to .25 second; ideally uses .1 second for unit using full-wave rectification and .2 second for a unit using half- or self-rectification.
        ii) Selects and sets kilovoltage from 40 to 65 kilovolt range.
        iii) Selects and sets milliamperage at 50 or 100 milliamps.
        iv) Checks factors on tube rating chart.
2. Performer sets up test in examination room where x-ray machine is located:

OK-RP ;RR;RR

6. Check here if this is a master sheet..(x)

This is new assignment to this number.

Task Code No. 173

This is page 2 of 3 for this task.

List Elements Fully

- a. Performer obtains loaded cassette of appropriate size, such as 10 by 12 in.
- b. Performer places cassette in position on x-ray table; adjusts x-ray tube to provide a focal-film distance of 30 to 40 inches.
- c. Performer obtains lead numerals and tape or other film marker and prepares identification for the film, indicating the time setting used, the date, and the unit being tested. May include kVp, mA and focal-film distance.
- d. Performer obtains lead sheeting and masks all but the area of the cassette to be exposed (allowing for multiple exposures to be made for test). Places identification marker on exposed area.
- e. Performer collimates the beam to conform to the area on the cassette to be exposed by turning on light in collimator; centers crosshair shadows on area and trims collimator settings so that light cast corresponds to the size and shape of area desired.
- f. Performer obtains top to use in test (a small diameter radiopaque top with a small hole near the edge) with a base for top (to retain it in the area to be radiographed). Places base and top on cassette in area to be radiographed.

3. Performer starts top spinning at a moderate speed. Returns to control room and activates x-ray machine by pressing hand trigger.

4. Performer repeats test for the unit by using additional areas of the cassette the desired number of times; may use additional cassettes; uses the same technical factors each time.

5. As soon as exposures are made, performer has exposed x-ray film processed or decides to process personally.

List Elements Fully

6. Performer arranges to review processed radiograph(s) on view boxes. Assesses the accuracy of each timer as follows:

   - a. Performer notes whether radiograph is interpretable in terms of detail, density, contrast, distortion, and presence of artifacts. Notes whether dots are elongated or appear as gray dashes (resulting from too rapid a speed of rotation), or whether dots are superimposed (resulting from too slow a speed). If any problems appear to be independent of timer accuracy, performer checks technical factors, processing, or changes speed of rotation of top. Repeats spinning top test and processing steps as described above until adequate radiograph(s) are obtained.
   - b. Performer assesses the accuracy of the timer(s) in terms of the number of dots appearing on each image of the top for a given unit:
     - i) For exposure factor of .1 second (at 60 Hz alternating current) full wave rectification, performer checks that 12 dots appear for each exposure.
     - ii) For exposure factor of .1 second (at 60 Hz alternating current) half- or self-wave rectification, checks that 6 dots appear for each exposure.
     - iii) Extrapolates correct number of dots for other time settings as appropriate, based on 120 current impulses in full-wave rectified current and 60 current impulses in half-wave rectified current per second.
     - iv) If there are fewer dots than required, performer judges that the timer is too fast; if there are more dots than re-

TASK DESCRIPTION SHEET (continued)

Task Code No. 173

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
quired, performer judges that timer is too slow; if there are variations in the number of dots performer judges that the timer is erratic. c. Performer may assess the density of the dots for full wave rectified units. If the radiographic density of the dots does not appear equal in degree on a single exposure, performer may decide to have valve tubes or Thyrx timer tubes checked, depending on the pattern of light and dark dots. 7. If performer decides that the timer is faulty, performer informs repair service by calling in-house repair staff or the manufacturer's repair service. Indicates the results of the test and the unit involved. a. Performer may decide to shut down unit; if so, attaches out-of-order sign and/or informs appropriate technical staff that unit is not to be used until repaired. b. Performer may decide, if the unit's timer is consistently too fast or too slow, to post or indicate on technique charts what compensations should be made for the inaccuracy of the timer (such as setting longer times for too-slow timer). If so decided, performer posts instructions in prominant location, on technique charts for unit, and/or informs appropriate staff. 8. Performer may record results of test and what was done. Performer places radiographs of test and any other records in appropriate location for filing.	

TASK DESCRIPTION SHEET

Task Code No. 175

This is page 1 of 4 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

X-ray machine kVp and/or mA selectors tested by use of penetrometer;exposures showing density and contrast at various settings assessed for accuracy of calibration;repair service informed of defective autotransformer or mA output,or compensating adjustments for changes in output posted and reported; record placed for filing.

2. **What is used in performing this task?** (Note if **only** certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

X-ray machine control panel, table,x-ray tube;cassettes;lead sheeting;lead numerals and tape or other film marker;view boxes;pen or pencil;technique chart(s); telephone;out-of-order sign;penetrometer; prior test radiographs for unit;prior standard radiographs of density for given technical factors; felt marker;tube rating chart

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. **If "Yes" to q. 3:** Name the **kind** of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologist;radiologic technologists; repair personnel

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Performing penetrometer calibration test of kVp or mA selectors of x-ray machine output by selecting appropriate test-constant technical factors and conditions for test;setting up cassette and penetrometer;varying kVp or mA (with timer adjustments for constant mAs) for each kVp or mA setting on control panel and making exposures for each;evaluating radiograph density and contrast for signs of damage or change in quality of output;assessing need for change in technique chart(s) to compensate for change in output;posting compensating changes in kVp or mA; arranging for repair;recording.

List Elements Fully

Performer checks whether kilovoltage and/or milliamperage settings of x-ray machine controls correspond to the actual output by performing calibration tests using a penetrometer (step wedge aluminum ladder) as a result of:

a. Assignment to perform periodically.
b. Request to investigate trouble reported or noted.
c. Decision to do.

1. Performer checks kilovoltage output settings for any x-ray unit by entering control room for designated machine:
   a. Checks to see that indicator light shows that x-ray machine is ready for use. Makes sure that it is warmed up and that all circuits have been stabilized.
   b. Checks line voltage meter and, if required, turns compensator dial until needle is aligned properly on line meter.
   c. Selects low milliamperage and time settings established for the test and used before. May check prior records. Makes sure that technical factors for test are within safe limits as shown on tube rating chart.
   d. Sets the minor kilovoltage selector at its lowest level,and the major kilovoltage selector at the

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6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 175

This is page 2 of 4 for this task.

List Elements Fully

lowest setting or at 40 kVp, depending on procedures established for the test.

2. Performer sets up kilovoltage test in examination room where x-ray machine is located:

   a. Performer obtains loaded cassette of appropriate size, such as 10 by 12 inches, with intensifying screens and film of speed used for prior tests.
   b. Performer places cassette in position on x-ray table; adjusts x-ray tube to provide a focal-film distance of 40 to 48 inches or distance used in prior tests.
   c. Performer obtains penetrometer (a series of aluminum bars of same thickness and width but of varying lengths, placed one on top of another by order of length so that a series of steps are created). For start of test, performer places the penetrometer on the cassette so that it is flush with one edge of the cassette, permitting a series of exposures to be made subsequently.
   d. Performer obtains lead numerals and tape or other film marker and prepares identification for the film indicating kilovoltage setting(s) to be used, the date, and the unit being tested. (May include time, mA, and focal-film distance.) Places marker for current setting at one end of penetrometer.
   e. Performer obtains lead sheeting and masks all but the area of the cassette occupied by the penetrometer.
   f. Performer collimates the beam to conform to the size of the penetrometer by turning on light in collimator; centers crosshair shadows and trims collimator settings so that light cast corresponds to the size and shape of penetrometer.

List Elements Fully

3. Performer carries out test of the major kilovoltage selector:

   a. Returns to control room and activates x-ray machine by pressing hand trigger. Watches controls for evidence of a line surge or excessive drop. Repeats test if this occurs.
   b. Returns to examination room and moves lead sheeting and penetrometer so that next exposure will be made adjacent to prior exposure with all other areas masked; places marker for new setting on penetrometer. Centers x-ray tube and collimates as before. Moves major kVp selector to the next higher setting and repeats exposure.
   c. Performer continues to make the series of exposures, one for each setting in ascending order, until an exposure has been made for each setting on the major kVp selector in adjacent areas on the x-ray film.

4. Performer carries out the test of the minor kilovoltage selector similarly by keeping the major selector constant at a low setting or 40 kVp, and making a series of exposures (on a separate cassette), one for each setting on the minor kVp selector. Marks exposures as appropriate.

5. As soon as a full set of exposures are made, performer has exposed x-ray film(s) processed or decides to process personally.

6. Performer arranges to review processed radiograph(s) on view boxes and assesses the accuracy of each kVp selector as follows:

TASK DESCRIPTION SHEET (continued)

Task Code No. 175

This is page 3 of 4 for this task.

List Elements Fully

List Elements Fully

a. Evaluates visually the changes in density on the radiographs. Notes whether indicated increases of kilovoltage show definite, gradual, and continuous increases in density. Notes whether increase in density is more marked for major selector than minor, as it should be.

b. Notes any decrease or unusual increase in density. If so, notes that autotransformer is in need of adjustment or repair.

c. Performer evaluates the changes in contrast on the radiographs. Notes whether contrast decreases with increasing kilovoltage so that there is a high contrast at the lower kV's with a relatively short scale of differentiation, grading to lower contrast with an increasing scale of differentiation as the kV increases.

d. Notes anything unusual in the contrast pattern produced. If so, notes that machine (autotransformer) is in need of repair.

7. Performer checks whether the decline in autotransformer output is sufficient to warrant compensation in the kVp selector settings used for examinations (to change setting to bring about the same kVp output):

   a. Performer obtains prior radiographic test films of penetrometer for the given unit and for major and/or minor selectors. Places these in sequence on view boxes so that performer can evaluate whether the degree of density for given settings are the same (with all other technical factors constant) over time. Obtains a prior test radiograph to compare which has been designated for standardization of density for kilovoltage settings. Compares test film by judging whether density for given settings in test film match prior and standard density for the settings.

   b. If the performer judges that the density of the test film shows a decline in the kilovoltage output for the settings, performer judges the extent of the decline by comparing marked settings on the films for areas of equal density. Notes the regularity and amount of the difference. Checks whether change is due to line voltage change, type of film used, or processing.

   c. Performer judges whether there is sufficient decline in the radiographic density to warrant a change in the settings used for examinations (to compensate for declining density due to decline in the kilovolt output obtained for selector settings). If so, performer may bring test film and standard film to radiologist. Shows the films; suggests the kilovoltage change required, and either obtains radiologist's approval for posting changes in settings or obtains instructions on the amount of change or lack of need for change.

8. If test results indicate that kilovoltage settings are consistently too low (or too high) and if radiologist approves, performer indicates on technique charts what compensations should be made for the inaccuracy of the particular kilovoltage selector. Either makes changes on the technique charts for the unit or posts notice calling for the proper adjustments; informs appropriate staff.

9. If performer decides that the kilovoltage test indicates a machine fault (autotransformer) rather than normal decline in the kV output, performer informs repair service by calling in-

Task Code No. 175

This is page 4 of 4 for this task.

List Elements Fully

house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit.

10. If not already done, performer marks test films with date; may record results of test and what was done. Performer places radiographs of test and any other records in appropriate location for filing.

11. Performer checks milliamperage output settings for any x-ray unit as follows:

    a. Checks line voltage and warms up machine as described above if not already done.
    b. Selects a low kV setting or the one used regularly for the test.
    c. Sets milliamperage setting at the lowest indicator for start of test.
    d. Selects a milliamperage-second to be constant for entire test or checks the mAs used in prior tests. For each setting on milliamperage selector chooses the timer setting that will result in the mAs selected (mAs = time x mA). With limited settings, chooses closest approximation to the desired timer setting. Checks tube rating chart to be sure settings are within safety limits of the tube.
    e. Sets up test in examination room as described above, using markers to indicate the mA setting selected.
    f. Carries out penetrometer test as described above, so that a series of images are recorded of penetrometer with kVp and other variables constant and timer adjusted to provide constant mAs, while mA is graduated (by changing the mA so that there is an image for each of the unit's mA settings from lowest to highest).

List Elements Fully

    g. Has film processed and placed for review as described above.

12. Performer reviews processed radiograph(s) on view boxes and assesses the accuracy of each mA selector. Performer evaluates whether there are any differences in the density or contrast at the various mA settings. Since mAs and kVp are constant for all exposures, judges that equipment is in need of repair if any great differences are apparent.

13. Performer checks whether the mA output has changed sufficiently to warrant compensation in mA selector settings used for examinations (to change setting to bring about the same mA output):

    a. Obtains prior tests for unit and standard radiograph for density at the given mAs. Compares as described above; checks whether any change in output is due to line voltage change, type of film used, or processing. Estimates amount of compensation needed for mA settings (if any); may check with radiologist as described above.
    b. If adjustments are needed, changes technical charts or posts and informs appropriate personnel as described above.
    c. Records and files test materials as described above.

Editor's Note: Current thinking suggests that this task is not sufficiently sophisticated or accurate to be relied on for more than gross indications. See other calibration tasks.

TASK DESCRIPTION SHEET

Task Code No. 178

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Fluoroscope controls, TV monitor controls, and phototimer checked for readiness for use; repair service informed of need for repair; unit shut down and appropriate staff informed; record placed for filing.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Fluoroscope generator and/or remote control panel indicators and controls;table;fluoroscope x-ray tube;intensifying screen;spot film cassette;view box;TV monitor and controls;pen or pencil;spot film device and controls;technique chart;tube rating chart;telephone;out-of-order sign;phantom,penetrometer or test object;protective lead garments;operating manual;key

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologist(s);radiologic technologist(s);repair personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking,preparing fluoroscope controls (and phototimer) by turning on power;selecting mode;selecting and setting technical factors,examination timer,exposure timer,spot film device;checking automatic density control with mA indicator;checking kVp, TV monitor and mA settings by adjusting control dials; checking phototimer by noting whether,with spot filming,safety timer is needed or processed spots are too light;arranging for repair and shutting down unit if warranted;reporting,recording as appropriate.

List Elements Fully

Performer checks whether fluoroscope unit(s) and TV monitor(s) are functioning as a result of:

a. Regular assignment.
b. Request to investigate problem reported or noted.
c. Decision to do.

1. For each unit being checked, performer goes to control panel for x-ray and fluoroscope generator and (if separate) to remote control fluoroscope panel. (Unit may combine controls for fluoroscopy and radiography modes.)
   a. Performer uses key and turns on main power switch for generator;allows time for unit to warm up; notes when indicator "ready" light turns on.
   b. If appropriate, sets controls for fluoroscopy mode.
   c. If appropriate,checks line voltage meter and turns compensator dial (if needed) until needle is aligned properly on line meter.
   d. Selects and sets kVp selector to setting usually chosen; (may check that indicator dial is working while adjusting).
   e. Performer selects mA setting or density as appropriate.
   f. Sets fluoroscopic examination timer to maximum position.
   g. If mA is automatically controlled according to patient thickness, performer

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6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 178

This is page 2 of 3 for this task.

List Elements Fully

turns fluoroscope mA selector to maximum position. If not automatically controlled, sets as appropriate.

h. If exposure timing is manually controlled, performer chooses lowest time on exposure time selector.

i. Checks that kVp, mA, and time selections are within safety limits as given on tube rating chart.

2. Performer dons protective lead garments and enters examination room for unit with object to be used for fluoroscopy check (phantom, penetrometer or other test object).

   Performer places object to be used for check on examination table and centers fluoroscope x-ray tube over object.

3. To check automatic density control, performer closes fluoroscope shutters. Returns to control room. Activates fluoroscope exposure footswitch and reads mA values on mA meter on control panel. Checks whether meter reads at maximum mA for unit's fluoroscope output (as listed on unit or in manual). If unit is functioning properly, releases footswitch and opens shutters. Resets fluoroscopy examination time to maximum.

4. To check fluoroscopy controls, performer centers and collimates tube as appropriate over object to be used for check and adjusts focal film distance to standard distance. If appropriate, moves image intensifier into position. Turns on TV power switch controls as appropriate. Activates fluoroscope exposure by pressing footswitch. Views object being fluoroscoped on TV monitor:

   a. Performer adjusts TV brightness controls to be sure that they are operating.

List Elements Fully

   b. Performer adjusts kVp control (and mA control if appropriate) and observes effects on TV monitor to be sure that controls are operating.
   c. Checks examination timer by noting whether time elapse indicator moves during exposure, showing decreasing time left for examination.
   d. May check that indicator operates properly when maximum examination exposure time is reached.

5. To check phototimer, performer selects spot film sequence on selector. If appropriate, inserts cassette into holder or bucky. Makes sure phantom is centered.
   a. Performer activates controls for spotfilm exposure and notes whether exposure is terminated by phototimer or by safety timer. (Notes by sound of safety timer or indicator light).
   b. Makes sure not to change mA or kVp settings while an exposure is being made.
   c. Performer may have cassette(s) processed. Views processed spot films on view box to assess whether films are too light (indicating that phototimer is not functioning to provide adequate exposure).

6. To check manual timer, performer notes whether spot film exposure is terminated in time set; may decide to do spinning top test. Repeats exposure check for other timer settings, checking factors on tube rating chart.

7. If performer decides that any of the fluoroscope controls are not functioning properly, performer informs repair service by calling in-house repair staff or the manufacturer's repair service. Indicates the problem and the unit involved.

TASK DESCRIPTION SHEET (continued)

Task Code No. 178

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
a. Performer may decide to shut down unit; if so, attaches out-of-order sign and/or informs appropriate radiologist(s) and technologist(s) that unit is not to be used until repaired. b. May record results of check and what was done and place in appropriate location for filing.	

TASK DESCRIPTION SHEET

Task Code No. 180

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Test tubes or vacutainers prepared, labeled; test tubes filled with blood samples; samples placed for pick up or delivery.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD or standard orders for blood sample; disposition sheet; vacutainers or syringes for blood samples; test tubes of appropriate colors for tests; anti-coagulant; stoppers; sterile needles; tourniquet; labels; pen; iced container; tray; (may use prepacked venipuncture kit)

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Physician; any patient present

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing blood samples for the laboratory by preparing materials, labels and, if appropriate, adding anti-coagulant to test tubes; filling test tubes from syringe; attaching labels with relevant information to samples; placing for pick-up or delivery.

List Elements Fully

Performer prepares materials for blood samples and prepares samples for the lab as a result of:

a. Regular assignment; b. Request.

1. Performer receives MD's orders on purpose of blood samples and special equipment or labeling needed, or performer has standing orders for special procedures.

2. Collects needed equipment on tray from supply areas. Includes vacutainers or syringes, sterile needles, tourniquet, labels, test tubes of different colors (which indicate which lab test is to be performed on contents), stoppers. May use prepacked venipuncture kit. If so, checks for expiration date. If appropriate, adds anti-coagulant to test tubes and prepares iced containers. Places tray for use.

3. Performer stands by as MD draws blood into vacutainer or syringe(s).
   a. If performer is to fill test tubes from syringe, performer removes needle from syringe. Expels appropriate amount of blood into test tubes (according to test requirements) slowly, so as to avoid hemolyzing the blood. Inserts stoppers.
   b. Performer attaches labels with identification information to test tubes or vacutainer. If not already done, prepares labels. If

DK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 180

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
appropriate, performer includes information indicating time, nature of test and exact location from which blood was drawn. c. Makes sure that test tubes or vacutainer are accurately labeled. 4. If appropriate, performer places test tubes in iced container. Performer places test tubes for pick up or delivery.	

TASK DESCRIPTION SHEET

Task Code No. 181

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient reassured; materials assembled; patient prepared; meatus and genital area cleansed; retension catheter inserted into urethra and bladder; urine specimen collected; balloon inflated; catheter attached to IV or drainage tubing; amount of urine collected measured, recorded; MD informed when patient is ready, if appropriate.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD's orders,x-ray requisition sheet,or check list; drape sheet;sterile towel;lamp;sterile gloves;kit with antiseptic solution and sterile containers; sterile syringe,sterile water,sterile balloon retention catheter(appropriate for procedure),lubricant, swabs or cotton balls,gauze,forceps,specimen container,clamp or hemostats, IV or drainage tubing; tape; scissors

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to be catheterized; referring MD; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Catheterizing any male or female pt.'s urethra with retention balloon catheter by reassuring;assembling sterile equipment; preparing pt. using sterile procedures; inserting catheter into urethra and bladder; reassuring and/or collecting urine specimen; inflating balloon catheter with sterile water; attaching catheter to drainage or IV tubing; terminating and reporting if extreme pain or resistance is encountered; recording amount and appearance of urine collected; reporting when ready if appropriate.

List Elements Fully

Performer catheterizes a male or female patient's urethra as a result of a request or after deciding to do personally,such as in preparation for retrograde voiding cystourethrography.

1. If requested to catheterize by MD, performer receives MD's orders or reads x-ray requisition form or check list.
2. If not already done, joins patient in designated room. Talks with patient and tells what will be done, explaining what the patient will experience. Reassures, especially with pediatric patient. If not already done, performer selects the size of the catheter to be used based on the patient's age, size and sex.
3. Performer uses sterile technique to assemble materials or has sterile tray prepared and placed near patient.
4. Performer has patient lie on table in supine position. Removes any lower garments. Performer drapes patient and places patient's legs in appropriate position. (For female, positions as for pelvic examination.) Arranges drape sheet so that it can be folded back to uncover genital area when ready to insert catheter. Places and adjusts lamp.

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 181

This is page 2 of 3 for this task.

List Elements Fully

List Elements Fully

5. Performer washes hands if not already done. Using sterile technique, uncovers sterile tray, using hands for outer wrapper and transfer forceps for contents, or uses sterile gloves:

   a. Prepares antiseptic solution from sterile kit.
   b. Fills sterile syringe with sterile water, and lays aside.
   c. Opens bag containing sterile catheter.
   d. Squeezes sterile petroleum jelly or other sterile lubricant on sterile gauze sponge and places within reach.

6. Performer prepares patient to have catheter inserted:

   a. Explains what will occur and that patient may experience cold and wetness.
   b. Folds back drape and exposes pubic area. May encourage patient to relax, place hands above head, and breathe regularly. Adjusts light.
   c. Performer places basin for use.
   d. Places sterile towel: for female, between thighs; for male, across lower thighs.
   e. Puts on sterile glove (or a fresh one) if necessary.
   f. Performer checks catheter for defects by injecting sterile water into the balloon lumen in appropriate amount. Deflates balloon and empties water into basin, maintaining sterility of the catheter. Replaces on tray.
   g. Performer cleanses a male by grasping the penis just behind the glans and retracting the foreskin. Maintains support of penis with one hand. Saturates cotton balls in antiseptic solution and cleanses the meatus and glans, discarding cotton balls as they are used. (Performer uses forceps or changes gloves after cleansing process if necessary.) Performer then places sterile towel over scrotum and under the shaft of the penis.
   h. Performer cleanses a female by separating the labia with gloved hand and exposing the urinary meatus. Holds the labia apart with one hand. Saturates cotton balls in antiseptic solution and cleanses the meatus and vestibule from above, downward, discarding cotton balls as they are used. (Performer uses forceps or changes gloves after cleansing process if necessary.) Performer places sterile basin on sterile towel close to buttocks, below separated labia.

7. Performer inserts catheter using sterile glove. Picks up appropriate size catheter and lubricates it with sterile lubricant. May clamp off the drainage lumen.

   a. With male, supports the glans, elevates the penis, and maintains gentle traction. Inserts lubricated tip into the meatus with gentle, steady pressure, noting some resistance at internal sphincter. Lowers penis and inserts catheter into bladder. Notes when bladder has been entered by sensing, and/or noting that some urine may flow. Allows urine to flow out into sterile basin through catheter.
   b. With female, inserts catheter into meatus appropriate distance or until some urine flows. Allows urine to flow out into sterile basin through catheter.
   c. Performer may massage the patient's abdomen and exert pressure to induce voiding.
   d. If performer finds that patient is experiencing severe pain or encounters much resistance, performer terminates attempt to catheterize; or,

TASK DESCRIPTION SHEET (continued)

Task Code No. 181

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
if appropriate, informs the physician in charge. e. If there is a urine flow and a specimen is to be collected, performer allows an initial flow into basin and then directs catheter into a sterile specimen bottle and fills to appropriate amount. Avoids touching the catheter with bottle. Places specimen on tray and covers with sterile cap. Has this properly labeled. 8. Performer attaches syringe with sterile water to balloon lumen and inflates the catheter balloon (which inflates inside bladder). When catheter is being held in place, performer clamps off the lumen and disconnects the syringe. Inserts a self-sealing device in lumen if available or uses clamp. 9. When the residual urine has been voided, performer flushes catheter with antiseptic solution. May attach IV drip tubing (which is kept clamped) or drainage tubing to the drainage lumen of the catheter, depending on the procedure to follow. May tape catheter in place. 10. Performer may measure and record the quantity of urine obtained in patient's chart; may record any unusual properties such as color, cloudiness, etc. 11. If performer has been requested to catheterize patient, performer informs physician in charge when patient is ready.	

TASK DESCRIPTION SHEET

Task Code No. 182

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient and suction machine readied for suctioning; tracheal passageway cleared or machine turned on and off as ordered; patient cleansed and/or machine cleansed; matter removed shown to MD.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD's orders; patient's chart or check list; suction machine; antiseptic soap, water; tubing and sterile catheter(s) for suction machine; trap and drainage bottles; cup; gauze, saline solution; sheet; clock or watch

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to be treated with use of suction machine; physician; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Setting up and using suction machine to clear airway or to assist with gastric lavage, by obtaining materials and machine, preparing patient, checking machine, turning machine on and off as ordered for gastric lavage, or inserting catheter into tracheal opening and clearing airway; cleaning up afterwards.

List Elements Fully

Performer uses suction machine for purposes such as gastric lavage (when MD inserts catheter) or with patient who has had a tracheostomy performed for the insertion of a tube for breathing. Performer uses suction machine as result of:

a. Verbal or written request of physician.
b. Own decision based on observation of patient's need.

1. Performer reads physician's orders on chart or check list, listens to verbal orders, or considers own decision.

2. Obtains necessary materials from storage area or checks that these are with machine. If obtained separately, performer places on table near patient or machine.

3. Performer wheels suction machine near patient or wheels patient to machine if stationary wall unit. (May check that machine is clean; may decide to clean or have cleaned). If not already done, plugs machine's cord into wall outlet.

4. Performer may explain to patient what will be done. May drape patient with sheet.

5. Performer checks machine by turning on suction and checking suction outlet with finger to feel suction. If machine is not functioning, decides to report; obtains another (portable) machine or wheels patient to another machine.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 182

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
6. Attaches prepackaged tubing and catheter set to machine by connecting tubing to machine and catheter to tubing.	
7. If gastric lavage, performer turns machine on and off at physician's orders after he or she has inserted catheter. Stands by during process.	
8. If patient has had a tracheostomy and needs passage cleared, performer inserts the suctioning catheter with appropriate force to enter the tracheal opening. When inserted to appropriate level, performer turns on suction and attempts to clear mucus from the passageway. Turns off machine when done. Performer may reassure or comfort patient during process; determines whether passage has been cleaned. If not, performer uses fresh catheter(s) and repeats suctioning until the airway is clear.	
9. Performer may clean the area surrounding the tracheal opening with gauze and saline solution.	
10. After use, performer discards the tubing and catheter(s). May place some of the matter removed from the patient in a cup, pouring it from the drainage bottle or glass, and may show to physician (if requested to do so).	
11. Discards cup or matter in bottle; may decide to wash machine and bottles or have subordinate wash (using antiseptic soap and water). Returns machine or has it returned (if portable).	
12. Records what was done and time on patient's chart or check list, or informs physician that task is completed.	

TASK DESCRIPTION SHEET

Task Code No. 164

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Equipment box relocked with breakaway lock.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Pieces of breakaway lock; equipment in box; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Relocking equipment box(es) with breakaway lock by checking contents, obtaining pieces of lock, and snapping lock into place.

List Elements Fully

Performer replaces breakaway locks on storage areas:

- a. When notified by co-worker that lock was opened.
- b. As a result of own need to open lock to get contents.

1. On being notified or deciding to replace lock, performer gets top and bottom pieces from desk or proper location.

2. Performer checks to make sure that opened box contains the appropriate items. If any item is not present or is damaged, performer replaces, asks co-worker to obtain replacement, or calls appropriate department for replacement.

3. When all the items are present, performer relocks the box by snapping the top and bottom pieces of the lock around the clasp.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET

Task Code No. 185

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Oxygen unit checked out and connected to regulator and nasal or oronasal mask; decision made when to apply oxygen if so ordered; mask applied and pressure and/or flow valves adjusted as ordered; patient observed; equipment shut and removed on orders or as decided; patient reassured.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Portable cylinder of oxygen and regulator, or piped oxygen outlet and regulator; oxygen mask (nasal or oronasal); rubber tubing, wrench, label, pen; outlet key

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to receive oxygen by mask; MD; co-worker.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Administering oxygen from portable or piped outlet unit using oronasal or nasal mask according to MD's orders by connecting cylinder regulator; checking unit for pressure and flow; attaching to unit; deciding when to administer if so ordered; applying mask to patient; setting pressure and/or flow valves as ordered; observing patient; reassuring patient; terminating flow and removing as decided or as ordered.

List Elements Fully

Performer may be asked to administer oxygen to a patient under a physician's direction or be ordered to administer to patient as needed over a period of time (such as during a procedure).

1. Performer receives orders to administer oxygen to a patient. Depending on whether a portable cylinder or a piped outlet oxygen system is to be used, performer wheels portable unit to the patient or wheels the patient to the piped outlet.

2. Performer obtains necessary supplies or has co-worker do so. Performer may have been told which type of mask to use or uses the one with the equipment.

3. If not already done, performer connects and checks the cylinder regulator for the portable unit:

   a. Checks that cylinder is labeled as oxygen. Checks the cylinder by quickly opening and closing valve wheel, allowing dust to blow out and listening for sound of gas escaping.
   b. Closes the flow valve and inserts regulator inlet. Secures the nut by turning with fingers. (May tighten with wrench.)
   c. Connects rubber tubing to regulator and to mask's tubing adapter.
   d. Checks contents gauge by making sure flow regulator

OK-RP;RR;RP

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 185

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
on inlet is closed. Opens cylinder valve wheel slowly, checking that pressure is at least 100 pounds. If not, labels cylinder empty or has co-worker do this. 4. If not already done, connects regulator for piped outlet system. Performer plugs flow regulator into wall outlet valve. Removes dust plug and uses outlet key. 5. If patient is to receive oxygen at once, performer places nasal mask over patient's nose (if patient is conscious) fitting mask into nostrils, or places oronasal mask over patient's face, depending on the equipment to be used. 6. If performer has been ordered to apply oxygen as needed, performer determines need by observing patient's respiration and color. When decided, proceeds at once as described above. 7. Performer sets valve(s) for settings ordered for pressure and flow rate for portable unit, or flow rate alone if wall unit. 8. Performer observes patient to make sure that patient is responding. Checks for return of normal respiration and color. Reassures patient when conscious. Helps relieve coughing; keeps patient in relaxed position. 9. Performer decides when to cease administering oxygen or receives physician's orders. Performer removes mask and shuts off valves. May decide whether to care for and return equipment and supplies or ask co-worker to do so.	

TASK DESCRIPTION SHEET

Task Code No. 186

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

New staff member(s) given orientation on department's floor plan, location of equipment and supplies, administrative procedures, standard operating procedures and record keeping; new staff given copies of applicable rules and regulations.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Copies of floor plan, rules and regulations, forms and records; departmental area

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

New staff; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Orienting new staff member(s) to departmental standard operating and administrative procedures, floor plan, location of equipment and supplies, record keeping by explaining, demonstrating, showing, giving copies of forms, rules and regulations, answering questions.

List Elements Fully

Performer orients new staff member(s) to the department's floor plan, location of equipment and supplies, administrative procedures, standard operating procedures, and the record keeping and forms to be utilized as a result of:

a. Request by co-worker.
b. Regular assignment.
c. Own decision to do.

1. If not already done, performer introduces self or is introduced to new staff member(s). Explains what will be covered in orientation.

2. Performer describes the procedures covered by the department that are relevant to the new member(s). Provides floor plan if appropriate and/or escorts new staff to the various locations. Points out locations of equipment and supplies, especially any emergency supplies and equipment.

3. Performer describes the standard procedures involved in typical work activities to which the staff are assigned and the work flow in relation to the floor plan and relevant locations of equipment and supplies.

4. Performer describes the types of record keeping forms related to the work, such as log books, schedule sheets, requisition forms; shows cop-

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 186

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
ies of forms and indicates how they are filled out and under what circumstances. 5. Performer may explain the procedures used for time keeping, recording overtime, and dealing with vacations, sickness, holidays, and lateness. 6. Performer answers questions, presents information, and elicits responses to judge whether the new member(s) comprehend what is being presented. 7. If appropriate, performer presents copies of institutional rules and regulations regarding employees and any rules and regulations applicable to the conduct of the work (such as safety requirements).	

TASK DESCRIPTION SHEET

Task Code No. 187

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Cassettes tested for film-screen contact by use of radiography of cassette with wire mesh screen on tube side surface; radiograph assessed for blurred shadows; cassette approved, repair arranged, or cassette discarded; record entered.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

X-ray machine control panel, table, x-ray tube; cassette loaded with intensifying screens and unexposed film; lead marker; view box; tube rating chart; wire mesh screen; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Repair personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking cassettes for proper film-screen contact by radiographing cassette with wire mesh screen placed on tube side surface; evaluating whether blurred shadows appear on radiograph; arranging to have defective cassette repaired or discarded; recording.

List Elements Fully

Performer checks cassettes with image intensifying screens for proper film-screen contact as a result of:

a. Regular assignment.
b. Request to investigate.
c. Decision to do.

1. Performer checks film-screen contact for one or more cassettes by obtaining the cassettes (loaded with the screens and unexposed film). Places cassette to be tested on x-ray table.

2. For each cassette at a time, performer:

   a. Obtains wire mesh screen and places on the tube side surface of the cassette. Makes sure that screen is lying flat.
   b. May prepare lead or aluminum marker containing date and cassette ID number; places on cassette.
   c. Adjusts x-ray tube to a focal-film distance of about 40 inches; collimates the beam to the size of the cassette by utilizing light in collimator, centering with crosshair shadows, and trimming to size and shape of cassette.
   d. Enters control room and makes sure that machine is warmed up and ready for use. Checks line voltage and adjusts if necessary.

OK-RP ;RR;RR

6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 187

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
e. Selects technical factors with low kVp; checks tube rating chart for safety of factors. f. Activates x-ray machine by pressing hand trigger. 3. Performer has exposed film processed or decides to process personally. Examines processed film(s) on view boxes. 4. Performer evaluates the radiograph to assess whether there is proper film-screen contact throughout the cassette and for both screens: a. Checks that shadows of mesh screen wires are sharp on all areas of the radiograph. If blurred areas appear on parts of radiograph, performer concludes that there is not uniformly good film-screen contact. b. Performer may decide to have defective cassette checked for proper installation of screens or tension of clamps. If repaired, performer repeats test as described above to be sure proper film-screen contact is obtained. c. If performer judges that problem cannot be repaired, such as warped cassette or defective screen, performer discards. 5. Performer may record test and results; may call manufacturer's representative if appropriate.	

TASK DESCRIPTION SHEET

Task Code No. 190

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient assisted in shift to or from bed, wheelchair, stretcher or table; patient transported to destination; appropriate personnel told of patient's arrival and given documents.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Bed, stretcher, wheelchair and/or table; patient's documents and/or identification band

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient needing assistance in shifting or transportation in wheelchair or stretcher; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Assisting patient to or from wheelchair, stretcher, bed, or table and/or transporting patient to designated area by positioning vehicle, making vehicle stationary during shift, supporting patient; transporting; notifying appropriate personnel when patient arrives; presenting any documents.

List Elements Fully

Performer assists a patient to or from a wheelchair or stretcher, or from a bed or treatment table, and/or will transport patient on stretcher or in wheelchair to designated location as a result of:

a. Decision to do so as a result of doing prior activity.
b. Regular assignment, such as return of patients after specific procedures.
c. Request of co-worker.

1. If performer is to transport patient, looks at patient's ID band to see where patient belongs, or is told location.

2. As appropriate, helps patient to or from bed, to or from wheelchair or stretcher. Performer places the vehicle to which patient is to be moved alongside patient or moves patient on vehicle alongside toilet, table or bed to which he or she is to be transferred. Locks wheelchair, bed and/or stretcher to make it stationary.

3. Performer places hands on patient in manner needed to give support and assist patient to shift. Performer may decide to ask co-worker to assist and does so.

4. After patient is transferred, performer unlocks vehicle to which patient has been transferred.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 190

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
5. If patient is to be transported, performer wheels vehicle to designated location. 6. Presents patient's documents or informs appropriate personnel that patient has arrived. 7. Performer may transfer patient after transporting if appropriate. If so, performs steps 2 to 4 as appropriate. 8. Performer may return empty wheelchair or stretcher to original location.	

TASK DESCRIPTION SHEET

Task Code No. 192

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Xeroradiography equipment inspected, turned on, checked; made ready for use; toner, paper, plate storage boxes changed or replenished; test run made; repair service called or problems reported.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Xeroradiograph conditioner, processor, storage boxes, cassettes, plates, controls; toner; paper; cloth; power outlet; key; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; co-workers; repair service

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Inspecting, checking, preparing xeroradiography equipment for use by turning on; checking conditioner and processor, reloading loaded and empty storage boxes with plates; adding or replenishing toner and/or paper; unjamming paper or plate; doing test run; calling repair service for other problems or reporting.

List Elements Fully

Performer checks or prepares xeroradiography equipment for use at start of day or periodically as a result of:

a. Assignment.
b. Request to investigate trouble reported or noted.
c. Decision to do.

1. Makes sure main power is on.

2. Performer checks or prepares the xeroradiograph conditioner (which provides electrostatic charge to photoconductive plates) for use as follows:

   a. Performer turns on conditioner. Allows to reach operating temperature.
   b. If indicator on conditioner shows that supply of plates is depleted, performer removes empty plate storage box from conditioner. Carries to xeroradiograph processor. Removes storage box loaded with plates (that had been processed) from processor. Inserts empty storage box with red dots facing up into processor and latches. Carries loaded storage box to conditioner and inserts as appropriate into conditioner with green dots facing up.
   c. If conditioner is not functioning, performer checks that storage box is properly latched, that con-

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 192

This is page 2 of 3 for this task.

List Elements Fully

ditioner has been allowed to warm up, and/or that plates have been allowed time to be deposited in machine after removal from storage box, depending on the problem.

d. If not able to remedy the problem performer calls emergency service by dialing in-house or company representative, or reports to supervisor.

3. Performer checks or prepares the xeroradiograph processor (which provides dry processing with a powder toner as developer) for use as follows:

  a. Turns on processor and allows to reach operating temperature.
  b. Uses key; opens and inspects transfer paper supply. If supply is low performer replaces as follows:

    i) Performer replaces paper as needed.
    ii) Obtains package of appropriate paper and opens.
    iii) Inspects and removes creased, torn, or curled sheets. Fans paper, and buckles gently to separate sheets.
    iv) Releases paper lever; pulls tray out; raises pressure plate and places paper on tray with dull surface turned up. Lowers pressure plate.
    v) Pushes tray back until it locks. Closes door.

  c. Inspects supply of developer (toner). If not at appropriate level, performer replenishes as follows:

    i) Unlocks developer tray release knob and pulls out. Obtains container of toner powder.
    ii) Opens container of toner (developer) powder; empties contents into developer well and rotates well to disperse powder evenly.
    iii) Closes lid and wipes away excess powder.
    iv) Pushes tray back until it stops. Turns and locks knob. Closes door.

  d. If paper does not release or misfeeds, performer turns off processor. Opens panel; inspects; manually removes jammed paper and discards. Turns on processor.
  e. If processor is not functioning, performer may do any of the following, depending on problem:

    i) Performer may set any problem cassette involved aside; asks technologist to redo exposure.
    ii) Performer may turn machine off, open processor, and, if cassette is jammed, manually push plate into cassette and wait for it to be released.
    iii) Performer may check that toner dispenser is inserted all the way with latch properly locked.
    iv) Performer may decide to allow machine time to warm up.
    v) May check storage box, remove, reverse, and/or reinsert paper.

  f. If not able to remedy the problem, performer calls emergency service as described above.
  g. If technologist or radiologist complain of poor image quality, performer may discuss the contrast settings available (low, medium and high), the density control settings (low, medium and high). May suggest trying changes in settings or changes in technical factors.

TASK DESCRIPTION SHEET (continued)

Task Code No. 192

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
4. Performer makes test run to be sure machines are operating satisfactorily or to distribute toner evenly: a. Obtains empty cassette from designated holder. Selects image contrast, and inserts in conditioner slot with green dot facing up. b. Removes cassette with charged plate when it is released and indicator shows "ready." c. Selects development mode and density and inserts loaded cassette into processor slot with red dot facing up. d. Removes empty cassette when it is released and replaces in cassette holder. e. Removes processed xeroradiograph from receptacle and inspects for debris, artifacts and quality. If there are problems with the quality of the xerograph, performer makes any adjustments that seem appropriate, such as toner replenishment or evening of its distribution. f. Handles any problems encountered in test run as described above. If not able to remedy the problem, performer arranges for repair as described above.	

TASK DESCRIPTION SHEET

Task Code No. 193

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Materials needed for procedure ordered; necessary prior procedures checked on and reordered if necessary; patient readied for special procedure by having relevant body area exposed and swabbed; MD or co-worker informed when patient and materials are ready.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's requisition sheet, chart, or medication and treatment check list; physician's orders; sheet; lamp; antiseptic solution; swabs

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to have special procedure; co-workers; physician

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Having any patient and materials prepared for special procedure and readying patient for examination by reviewing orders; arranging to have materials and injections prepared, have vital signs taken, have medication administered; preparing patient on examination table; exposing relevant area of patient's body; swabbing with antiseptic; notifying physician or co-worker when ready.

List Elements Fully

Performer readies patients for radiographic or similar examinations or procedures as a result of:

a. Regular assignment.
b. Request.

1. Performer reads patient's requisition sheet, chart, or medication and treatment check list to determine what procedure patient will be undergoing. If any surgical procedures or injections will be involved, performer notes any decisions recorded on site of injection or incision. Performer notes orders with respect to medications or sedation required or any special orders for preparing patient.

   Performer may receive physician's verbal orders.

2. Performer may decide to do personally or ask co-worker to do the following:

   a. Prepare labels and forms for use by physician or for specimens to be taken.
   b. Prepare hypodermic injection on orders.
   c. Prepare tray with materials needed.
   d. Give patient medication such as sedative to be taken orally or injected.
   e. Take patient's vital signs.
   f. Escort patient to examination or treatment room.

3. If not already done, performer greets patient, briefly explains that performer will

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 193

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
prepare him or her for the procedure. If necessary, has patient remove any garments that will interfere with examination. 4. Performer checks that all pre-examination procedures have been done by referring to check list and/or questioning patient. Informs appropriate co-workers if omissions or errors have occurred and arranges for rescheduling. 5. When steps such as taking vital signs or giving sedation or medication have been accomplished, performer asks patient to get on examination table. If necessary, performer may decide to assist patient and/or to ask co-worker to assist. 6. Performer asks patient to assume position appropriate to the area which must be exposed for the physician. May assist or position patient. Performer may drape patient with sheet if appropriate. Performer exposes proper part of body for injection of anesthetic and/or incision, depending on the procedure to be followed. 7. Performer may swab with antiseptic solution area to be incised or injected. 8. When patient and materials are ready, performer informs co-worker or physician. 9. Performer may stand by and, as requested, reposition patient.	

TASK DESCRIPTION SHEET

Task Code No. 198

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Written MD orders obtained for medication to be taken orally; patient explained drug use, side effects, and questioned on allergy; medication obtained, measured out; quantity checked; medication administered; proper narcotics forms filled out; record entered.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD's orders, or patient's treatment and medication check list, or requisition sheet; narcotic control form, wasted narcotic control form; pen; medications in supply areas; key to narcotics supply; containers for administering medications; measuring implements

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to receive medication orally; accompanying adult if pediatric patient; MD; co-workers; supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Administering medication orally to any patient according to MD's orders after having quantity checked by obtaining and measuring out proper medication, and having it checked; checking on patient allergy; explaining use and/or side effects to patient; administering medication; filling out and signing proper forms if narcotic or regulated drug; recording medication given.

List Elements Fully

Performer administers medication taken orally based on MD's written or oral orders.

1. Performer is requested to administer medication orally, or reads patient's requisition sheet or treatment and medication check list.

   If MD's oral orders call for narcotic or regulated drugs, performer may fill out MD's prescription or appropriate form, or medication card, and obtain MD's signature.

2. If MD's orders call for narcotics or regulated drugs, obtains key to locked supply closet; selects proper medication; relocks and returns key. Other medication is obtained from unlocked supply areas. (May have order filled by appropriate co-worker. If so, checks amount.)

3. Performer checks expiration date on medication; checks for signs of deterioration; arranges to discard if appropriate. Selects currently usable medication.

4. Using calibrated cup or container, performer measures, counts, or pours out the amount called for.

5. Performer has MD or supervisor check amount. Readjusts if necessary.

6. Performer brings medication to patient, if liquid, in cup; if pill or powder, brings water. Performer explains name and

DK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 198

This is page 2 of 2 for this task.

List Elements Fully

purpose of medication and possible side effects if any. Asks patient about allergy to medication.

If patient reports allergy, performer reports this to ordering physician.

If patient has no allergy to medication, asks patient to drink or swallow medication (and water if appropriate). If patient is pediatric, performer may explain to accompanying adult how to help administer medication.

Watches to make sure medication has been swallowed.

7. Performer shows any leftover amount of narcotic or regulated drug to MD or supervisor; discards used cup or container and leftover medication.

8. If medication was narcotic or regulated drug, performer fills out narcotics control sheet with information called for, such as date, dosage removed from supply, dosage administered, patient's identification, and time dosage was administered, and signs sheet.

   If any amount of the narcotic or regulated drug was accidentally wasted by dropping or contamination, performer signs out for the additional dosage needed. Performer also fills out a "lost narcotic" form. Indicates which narcotic was wasted, date, time. Obtains signature of supervisor and signs form.

9. After medication has been administered, performer records medication, dosage, time, and date on requisition sheet, check list, or order form, and signs name. May inform MD that medication was administered.

10. Performer attaches copy of "lost narcotic" form to narcotics control form if appropriate. Delivers copies of forms to appropriate locations.

11. Takes any contaminated narcotic or the remains of wasted narcotic or its container to pharmacy, with copy of appropriate form.

TASK DESCRIPTION SHEET

Task Code No. 199

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient's temperature, pulse rate, respiration rate and blood pressure (vital signs) taken and recorded; abnormalities reported to physician.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Physician's orders, or patient's treatment and medication check list, or card and pen; sterile rectal or oral thermometer; lubricant; container for used thermometers; clock or watch; sphygmomanometer, stethescope; sterile pacifier or bottle

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; physician or co-worker; accompanying adult

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Taking and recording vital signs (temperature, pulse, respiration and blood pressure) of any patient by preparing and screening patient; using rectal or oral thermometer for temperature; taking pulse and respiration rate, noting irregularities; taking blood pressure using proper equipment; recording or verbally reporting; noting abnormal signs and reporting to physician.

List Elements Fully

Performer takes and records patients' vital signs as a result of:

a. Regular assignment.
b. Request by co-worker or physician's orders.
c. Decision to do after observing patient.

1. If regular assignment and not already done, may have patient remove clothes. May decide to assist.

2. If appropriate, reads physician's orders or treatment and medication check list, or questions patient or accompanying adult to determine whether patient is epileptic or for some other reason cannot take oral thermometer. Has patient relax if possible. If patient is infant or child, may have a sterile pacifier or bottle given to child to quiet.

3. Takes temperature. Uses oral thermometer if patient is adult and able to hold in mouth; uses rectal if patient is child or cannot have oral thermometer. Obtains sterilized oral or rectal thermometer. Shakes down to below 95°.

   a. With oral thermometer: asks patient to open mouth and places bulb of thermometer under patient's tongue. Has patient close lips.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 199

This is page 2 of 3 for this task.

List Elements Fully

List Elements Fully

b. With rectal thermometer: uses lubricant (petroleum jelly) and inserts thermometer carefully in rectum. Has patient lie still.

c. Checks time with clock or watch. After three minutes, removes thermometer and reads temperature. Records on check list or separate card, or may verbally report to physician.

d. Places used thermometer in designated container.

4. Takes pulse rate for appropriate number of seconds. Places fingers on wrist artery (or other artery designated). Uses watch. Counts pulse while noting irregularities. Records rate and regularity or may verbally report to physician.

5. Takes respiration rate. Watches rise and fall of chest or upper abdomen. Counts rises for appropriate number of seconds. Uses watch. Records rate or may verbally report to physician.

6. Takes blood pressure. Uses sphygmomanometer and stethescope:

   a. Performer chooses bag and cuff of appropriate size for the diameter of the patient's arm. Checks that monometer cuff is deflated and gauge is at zero.

   b. Performer determines whether to record pressure in both arms by noting MD orders or does so automatically if this is an initial examination. Otherwise, selects arm with initially higher pressure unless otherwise directed.

   c. Exposes patient's arm and supports arm at level of patient's heart. Wraps cuff around arm with lower margin about 2 1/2cm. above the antecubital space, with the bag over the inner aspect of the arm; fastens; attaches monometer to cuff. Makes sure that patient is calm and relaxed.

   d. Performer takes palpated systolic pressure to estimate the maximum pressure to which the system needs to be elevated. Tightens thumb screw of air bulb; inflates cuff by pumping bulb. Performer palpates brachial artery while inflating cuff until pulse disappears. Loosens thumb screw and feels for pulse while air escapes. Notes the pressure reading when pulse is first felt again.

   e. Performer places sterile stethescope pieces in ears and places bell or diaphragm of stethescope on the antecubital space over the previously palpated brachial artery. Applies stethescope head firmly with as little pressure as possible, with no space between skin and stethescope, and not touching clothing or pressure cuff. When using mercury manometer, performer positions himself or herself so that mercury reading can be made at eye level.

   f. Tightens thumb screw of air bulb while holding stethescope in place; inflates cuff by pumping bulb. Inflates cuff to about 30mm Hg above the point at which pulse sounds are last heard. Loosens thumb screw and allows air to escape at a rate of 2 to 3mm Hg per second.

   g. As the pressure falls,performer notes the sounds that become audible in four phases until the sounds disappear:

      1) Notes the first appearance of faint, clear tapping sounds. Notes gauge reading at the point at which initial tapping sound is heard for at least two consecutive beats (systolic pressure).

TASK DESCRIPTION SHEET (continued)

Task Code No. 199

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
ii) Notes period when a murmer or swishing quality is heard. iii) Notes period when sounds are crisper and increase in intensity. iv) Notes gauge reading when there is a distinct, abrupt muffling of sound (diastolic pressure). v) Notes point at which sounds disappear. h. When all sounds have disappeared, performer deflates cuff rapidly and completely. Records systolic, diastolic and fifth phase pressures taken or may report verbally. If in doubt, repeats. i. If appropriate, repeats procedure for other arm. Performer allows one to two minutes to elapse before repeating procedure to allow release of blood in veins. Reports as appropriate. Returns equipment or has this done. 7. Evaluates whether any signs seem abnormal; if so, notifies physician. 8. If a separate card was used to record vital signs, fills out patient's identification information and leaves card in appropriate place. If appropriate, informs physician that vital signs were taken.	

TASK DESCRIPTION SHEET

Task Code No. 222

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Duplicate photocopies of records or written materials made, collated, stapled, and placed for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Materials to be photocopied; photocopying machine; clips or stapler; collator

3. Is there a recipient, respondent or co-worker involved in the task? Yes...( ) No...(x)

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Making photocopies of documents, collating, and stapling; and placing for use.

List Elements Fully

Performer makes photocopies of written materials or other records as a result of:

a. Request.
b. Regular assignment.
c. Own decision to do.

1. Performer is told or knows what materials are to be duplicated and how many copies are to be made of each.

2. Performer takes the materials to be duplicated to the machine. Sets controls to the number of copies desired. Sets other controls according to needs as appropriate, such as for collation.

3. Performer activates machine.

4. When done, removes original and copies. If appropriate, collates materials unless done by copier, and staples copies.

5. Performer replaces originals and places duplicates for use as appropriate.

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET

Task Code No. 223

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Unoccupied bed or stretcher bed stripped and remade with clean linens.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Soiled or used linens; blanket and/or spread; fresh linens; receptacle for soiled linens; bed or stretcher bed, mattress; pillow(s)

3. Is there a recipient, respondent or co-worker involved in the task? Yes...( ) No...(X)

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Making up unoccupied bed or stretcher bed by obtaining clean linens; stripping bed and disposing of soiled linens; putting on sheets, pillow case, blanket and spread as appropriate.

List Elements Fully

Performer makes up unoccupied bed or stretcher bed as a result of regular assignment, when requested, or when judged appropriate.

1. Performer obtains clean linens from appropriate storage area; may include blanket, bedspread.
2. Removes used or soiled linens from bed. May remove blanket, pillow or spread and set aside. Puts discarded linens in appropriate receptacle.
3. Spreads clean bottom sheet on bed, folding excess under mattress; tucks in at head, making hospital corners; if sheet is long enough makes hospital corners at both ends.
4. Spreads clean top sheet on bed, folding excess under mattress at foot of bed; tucks ends making hospital corners at foot of bed.
5. If appropriate spreads blanket on bed; tucks under mattress at end; folds sheet over blanket at head.
6. Puts clean pillow case on pillow and places at head of bed.
7. If appropriate, places sprea on bed.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 227

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Emergency storage locations checked for presence of emergency medicinals and equipment; supplies restocked and/or reordered.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Emergency supplies (such as prepared intracardial hypodermic injections, ambu bags) in storage locations

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking for presence and condition of emergency supplies in proper locations;and restocking as needed by checking or having checked; restocking or ordering items damaged, used,or in short supply; discarding damaged or used medicinals and supplies.

List Elements Fully

Performer checks the department's emergency supply areas, including emergency supply locations in treatment rooms and departmental emergency supplies (other than emergency cart):

a. Periodically.
b. When requested.
c. After use of supplies.

1. Performer has list of supply requirements, obtains list, or lists are posted at each location. Performer goes to each designated location. Checks for the presence of specific prepackaged medical supplies, medications and equipment. Checks dates of items that expire periodically.

2. Performer may count the number of items of a certain type to see that appropriate numbers are present,or may decide to have subordinate check for missing items and report back.

3. For missing, expired or damaged medicinal items, performer removes and discards. Notes which prepared medications or containers need replacement.

4. Performer obtains the needed prepared medications from supply areas and refills,or replaces with appropriate packages or containers, making sure that dates are not expired. If performer notes

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

This is a new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 227

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
that supplies are running short, may request that supply areas be restocked. 5. If any equipment is not in place, intact, or in adequate supply, performer notifies proper department by telephoning and/or filling out order form; may tell appropriate co-worker to replace breakaway locks if needed, or decides to do so personally.	

TASK DESCRIPTION SHEET

Task Code No. 243

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Decision made on restraint to use; patient restrained; appropriate personnel notified.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Gauze; foam pads; cloth tape; sheets; special restraints; bed, wheelchair; telephone; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient needing restraint; MD or co-worker; hospital personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Restraining any patient, by deciding what type of restraint to use; holding or tying patient with restraining devices; trying to calm patient; asking for help and informing staff (if in-patient).

List Elements Fully

Performer may restrain a patient at any time as a result of:

a. Request by physician or co-worker.
b. Own judgment that restraint is needed for patient's or other's protection.

1. Performer assesses what type of restraint is needed.
   a. May hold on to a limb or hold the patient bodily; or hold arms or legs together.
   b. May ask co-worker for assistance.
   c. May tie down patient's hands, limbs or body. May use gauze, foam pads, cloth tape or rolled up sheets to tie down patient. May use special leg, hand or body (posey) restraints; may attach restraints to bed, wheelchair, etc.

2. Performer may try to reassure and calm patient.

3. If patient is in-patient, may call ward (after task is over) to report need for restraint and to inquire about reason for patient's not being restrained beforehand.

   May note information obtained and inform physician or co-workers as appropriate.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

This is a new assignment to this number

TASK DESCRIPTION SHEET

Task Code No. 260

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Hypodermic injection prepared as ordered; narcotic control forms filled out.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Physician's orders or standard orders; narcotic control and wasted narcotic control forms; pen; medications in supply areas; key to narcotics supply; sterile needles, syringes, caps, bottles; alcohol swabs; measuring implements

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Physician; supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing a hypodermic needle with injection dosage on orders by obtaining medication and filling sterile syringe with proper amount of medication; placing for use; filling out and signing narcotic regulation forms.

List Elements Fully

Performer prepares a syringe with specific medication, in specific amount, to be used for injection as a result of:

a. Regular assignment, with dosage predetermined (written).
b. Part of preparation of procedure tray, or replacement, with dosage predetermined.
c. Part of procedure or at any time, at request of physician who specifies type and amount.

1. Performer may have standing orders,may read medication or index card or physician's orders calling for dosage, or listens to physician's request.

2. If physician's oral orders call for narcotic or regulated drug, performer may fill out physician's prescription on appropriate form or make out medication card and obtain physician's signature.

   If medication orders call for narcotics or regulated drugs, performer obtains key to locked supply closet;selects proper medication; relocks after medication has been obtained. Performer goes to appropriate unlocked supply area for other medications.

3. Checks expiration date on medication; checks for signs of deterioration; arranges to discard if appropriate.Selects currently usable medication.

4. Performer prepares medication for injection:

QK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 260

This is page 2 of 2 for this task.

List Elements Fully

a. If the medication is prepackaged, performer inserts sterile needle through stopper of bottle; injects amount of air equal to the volume of medication to be withdrawn; draws up into syringe;expels air bubbles from syringe; covers point of needle with sterile cap. If prepacked with syringe and needle, expels air and caps.

b. If the medication is not prepackaged prepares as follows:
   - i) If medication is a powder, performer obtains sterile bottle containing a given amount of powder; using sterile syringe, injects air equal to the amount of medication to be administered into bottle of sterile water; draws up indicated amount of sterile water into syringe to dissolve powder; squirts this back into bottle with powder; mixes with powder; turns bottle over and draws appropriate amount of mixture into syringe. Expels air;covers tip of needle with sterile cap.
   - ii) If medication is a liquid, performer uses sterile needle and sterile syringe; injects appropriate amount of air and draws up proper amount of medication into syringe;expels air;covers tip of needle with sterile cap.

5. Performer brings prepared hypodermic injection to MD who ordered, places on tray, or in other designated location, as appropriate. May also bring alcohol swabs.

6. Performer may indicate any leftover amount of narcotic or regulated drug to MD or supervisor and discard. Performer fills out narcotics control sheet with information called for, such as date, dosage removed from supply, and dosage ordered.

List Elements Fully

7. If any amount of the narcotic or regulated drug was accidentally wasted by dropping or contamination, performer signs out for the additional amount needed. Performer also fills out a "lost narcotic" form. Indicates which narcotic or drug was wasted, date, time. Obtains supervisor's signature and signs form.

8. Performer attaches copy of "lost narcotic" form to narcotics control form if appropriate. Delivers copies of forms to appropriate locations.

9. Performer takes any contaminated narcotic or the remains of wasted narcotic or its container to pharmacy, with copy of appropriate form.

TASK DESCRIPTION SHEET

Task Code No. 262

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

An electrocardiogram taken; EKG with patient's identification information attached to request form; MD notified of emergency signs in patient; EKG and request form placed for processing.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

EKG request with MD orders;
EKG machine with electrodes,
and/or baby electrode, amputee clamp;
table or wheel chair; electrode pads;
pencil or pen; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; physician; adult with pediatric patient; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Taking an electrocardiogram of any patient as ordered or determined, by preparing patient, administering exercise as ordered; taking standard readings or as ordered; marking strips with location code; tearing off strip and writing patient identification information; attaching to request form and placing for processing; notifying physician of emergency signs in patient.

List Elements Fully

Performer takes electrocardiograms of patients as a result of:

- a. Request of co-worker.
- b. Regular assignment.

1. If regular procedure or request, reads EKG request form and checks identification information with patient; fills in age and other information or corrects if necessary. Reads physician's orders.
    - a. Checks whether performer is to give patient exercises to do as specified by MD, or, if own decision to do EKG, reviews exercises decided on.
    - b. Notes whether patient is on medication and related instructions.
2. Administers exercise to patient as specified or decided, before and/or after regular procedure, as ordered.
3. Has patient lie on table or sit in wheel chair. May assist. May have adult help with child. Makes patient comfortable; explains procedures to patient or accompanying adult. Exposes patient's wrists, ankles and chest or has this done.
4. Wets patient's chest with electrode pads; straps electrodes to extremities.
    - a. With baby uses an additional lead and, following

OK - RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 262

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
physician's orders, uses baby chest electrode. b. If amputee, uses clamp to attach electrodes to stump. 5. Performer checks machine by turning it on; standardizing it, and checking that the recording is of adequate quality. If machine is out of cardiograph paper or not recording adequately, performer may decide to switch to another machine and does so; may have replacement or adjustment made by requesting co-worker to do so; may decide to adjust as needed or do so at a later time. 6. While recording readings, marks six different limb leads with marker button according to prearranged code. 7. Places electrodes on chest while operating machine, having located proper position on chest for this. Takes six different readings. 8. Marks each chest recording with marker button according to prearranged code. 9. Tears cardiogram off machine; writes patient's name and chart number on it, and attaches to patient's EKG request form. Places in designated location. 10. Throughout procedure, performer remains alert to patient's condition and notifies appropriate physician of signs of emergency.	

TASK DESCRIPTION SHEET

Task Code No. 264

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.) A request form for duplication of a form, record, or document filled in and attached to the material to be duplicated; placed for delivery.	**List Elements Fully** Performer orders duplication of forms, patient records, or other documents (such as EKG charts or radiographs) in amounts determined by institutional practices or as ordered as a result of: a. Request. b. Regular assignment. 1. Performer receives or locates the patient's record, document, or form, depending on institutional procedures. 2. Fills out request form for duplication process such as photocopying with information called for and appropriate number of copies entered. 3. Attaches request form to document or record and places for pick up or delivery. OK-RP;RR;RR
2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.) Request form for duplication; pen; form, document or record to be duplicated	
3. Is there a recipient, respondent or coworker involved in the task? Yes...( ) No...(X)	
4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.	
5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words. Ordering duplicate copies of forms, records, or documents by filling in order for predetermined amount, attaching to material to be copied, and placing for pick up or delivery.	Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 267

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Cassette with exposed film inserted in polaroid processor; radiograph removed, marked with identification information; placed for use; decision made on whether to reload cassette.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Cassette holder; cassette with exposed polaroid x-ray film; identification information; polaroid processor; marker; view box; coater and applicator

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologic technologist

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Processing exposed polaroid x-ray film with polaroid automatic processing equipment by inserting cassette; activating machine and removing when appropriate; separating positive film image from cover sheet; writing identification information on radiograph using marker; applying coater; placing to be viewed or filed.

List Elements Fully

Performer processes exposed polaroid x-ray films in polaroid processing equipment as a result of:

a. Decision to develop radiograph(s) taken by the performer.
b. Request.
c. Regular assignment.

1. Performer obtains exposed polaroid x-ray film in cassette from cassette holder or co-worker, and obtains accompanying identification information. Goes to processing equipment or plugs portable processor into wall outlet.

2. Lifts cover of polaroid processor and places cassette inside with metal plate facing up. Places tab of cassette between rollers. Locks tab in rollers. Lifts pressure lever. Replaces cover. Activates processor by pressing button.

3. When buzzer sounds, performer lifts processor cover and removes cassette. Replaces cover.

4. Performer opens cassette by releasing lock bar, opening lid, and lifting radiographic packet out. Performer separates the radiograph from the photosensitive covering sheet and discards the latter.

5. Performer may identify film by use of felt marker:

   a. Places film on view box.
   b. Using marker, writes identification information

OK-RP;RR ;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 267

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
such as date, view (such as R or L, anterior, lateral), patient's name, and log number, referring to information sent with film. May number film if several views were taken in a series. 6. Performer may coat the face of translucent film with prepared print coater at once or after it has been viewed by radiologist. Applies coater with firm, overlapping strokes. Checks to be sure all the edges and corners are covered. Is careful to avoid scratching print with edge of applicator. Allows film to dry before handling. 7. Places dry films for viewing or filing as appropriate. 8. Performer replaces empty cassette in storage area in processor or decides to reload cassette.	

TASK DESCRIPTION SHEET

Task Code No. 269

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Polaroid x-ray film cassette loaded with unexposed radiographic packet; placed for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Empty cassette; radiographic packet with unexposed polaroid x-ray film; storage locations

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Loading empty cassette with polaroid x-ray film by obtaining empty cassette and prepared radiographic packet; inserting film packet in cassette; closing, and placing for use away from any intense light.

List Elements Fully

Performer loads cassettes with polaroid film as a result of:

a. Decision.
b. Regular assignment.
c. Request.

1. Performer obtains empty cassette after having processed film or obtains from storage in the polaroid processor.
   a. Performer makes sure that there is no direct sunlight or intense artificial light in work area. May dim lights.
   b. Performer opens cassette by releasing lock bar and opening lid.

2. Performer obtains a radiographic packet designated for polaroid processing containing the pod (developing chemicals in an envelope), the light sensitive negative in a lightproof envelope, and the receiving sheet or positive paper. Handles carefully to avoid leaving fingerprints on or buckling the receiving sheet.

3. Performer raises, lifts and separates the cassette back and screen using one hand. Places the negative envelope in its holder under the end of the screen. Drops the screen after checking that negative envelope is not touching the mask.

4. Performer slides the film packet into the holder so

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 269

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
that the mask and positive sheet go over the screen and until the packet is flush with the end of the cassette. 5. Closes cassette; folds over and fastens tab end; checks that pressure lever is flat; depresses, pivots, and locks springs. 6. Raises pressure lever and withdraws envelope enclosing negative by sliding straight out. Releases presser lever and places it in flat position. 7. Performer stores cassette in processor, takes cassette for own use, or gives to co-worker who requested it, as appropriate. Keeps cassette out of intense light.	

TASK DESCRIPTION SHEET

Task Code No. 271

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Appropriate staff member informed of unusual EKG reading and/or physician informed of patient in distress.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Leads (12) of cardiogram;
telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Patient being given EKG; physician or other appropriate staff member.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Deciding whether to call staff person to evaluate whether unusual EKG reading is artifact, or calling physician in case of serious patient distress, by observing EKG reading and patient, judging whether there is unusual reading or patient condition; avoiding alarming patient; calling appropriate staff member.

List Elements Fully

Performer routinely notes EKG readings while EKG is being taken, as cardiogram is torn from machine, or while leads are being mounted on EKG chart in order to find extremely aberrant readings.

Performer also routinely attends to patient's condition while in contact with patient in case of severe patient distress.

1. Performer may decide, based on general gross guidelines, that EKG reading looks extremely irregular in relation to patient's appearance. Asks appropriate staff person to check whether reading is an artifact. Makes sure not to alarm patient.
2. Performer may decide that patient is in distress. Notifies appropriate physician. Makes sure to make patient comfortable.

OK - RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 272

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Schedule sheet for patient procedures planned; patients assigned times based on usual order for procedures, work loads, available staff, and time required; schedule filled out; schedule adjusted throughout day.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patients' requisition sheets; staff and room schedules; scheduling sheet; pen; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing and adjusting schedules for patient procedures by arranging requisitions by type of procedure and assigning times based on urgency, available staff, rooms, time needed for procedure(s), number of patients, and order in which procedures are done; assigning times to patients; recording and posting schedule; adjusting throughout day as appropriate.

List Elements Fully

Performer prepares the patient schedule sheet for the day as a regular assignment.

1. Performer obtains the requisition sheets for in-patients and out-patients who are to undergo examination or treatment procedures for a given day.
2. Performer groups the requisition sheets according to the types of procedures to be done, and arranges in their usual order by procedure based on institutional practices. May take account of whether patients are ambulatory, the degree of seriousness of illness or injury.
3. Performer notes the expected time required for each type of procedure, the number of rooms and staff available for the procedure, and the number of patients for each procedure.
4. Based on the patient load, the urgency, the time needed for procedures, and order of procedures, performer assigns an estimated appointment time for each requisition sheet.
5. Performer fills out schedule sheet with patient's name, in-hospital location or address, procedure to be done, and assigned time. Posts in control area.
6. Performer may notify appropriate staff when it is time

OK-RF;RR;RR

6. Check here if this is a master sheet..(✓)

This is new assignment to this number.

TASK DESCRIPTION SHEET (continued)

Task Code No. 272

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
to have them notify ward or floor personnel to ready and transport in-patients to the waiting area, based on the time scheduled and the time needed to prepare and transport patients. 7. Performer may periodically check on the appropriateness of the schedule by checking on absences, the number of patients waiting, and the times scheduled. May readjust schedule throughout day to eliminate undue waiting time for patients or to have patients readied earlier to avoid rooms being left idle.	

TASK DESCRIPTION SHEET

Task Code No. 273

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Automatic x-ray film processor inspected, checked, cleaned, and made ready for use; chemical solutions changed or supplemented; parts inspected and cleaned; timing and temperature checked; test films run; jamming noted or reported.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Automatic x-ray film processing machine(s) and parts, water valves, power cards and outlets; timing controls; temperature thermostats and indicators; bottles of developer and fixer solutions; water sink; cleansing cloths and sponges; rubber gloves, goggles; x-ray test film sheets; stoppers; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...( ) No...(X)

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Cleaning, inspecting and readying automatic x-ray film processor(s) for use by cleaning and checking machine parts; inspecting, changing, or supplementing developer and fixer solutions; turning on power and water; adjusting temperature; running test films and adjusting timing; checking on operation or noting jamming and deciding to fix or report.

List Elements Fully

Performer prepares automatic x-ray film processing machine(s) for use at start of day, after they have been shut down, or periodically as result of:

a. Assignment.
b. Request.
c. Decision.

1. If machine(s) have been shut down, performer turns on main water valve and then main power switch for the machine(s):

2. Performer may go to darkroom(s) attached to machine(s) to locate controls, or to room(s) in which machine exits are located, depending on where controls are located.

   a. Turns on water valve(s) to allow water to recirculate in each machine.
   b. Checks each temperature indicator to see that water and developer solutions are at appropriate temperatures. If temperature is improper, resets heater thermostat as needed.

3. Performer inspects and cleans the machine periodically or as needed:

   a. Shuts loading switch (if automatic). If parts are to be removed for washing, disconnects machine from power supply.

OK-RP ;RR;RR

6. Check here if this is a master sheet..(✓)

TASK DESCRIPTION SHEET (continued)

Task Code No. 273

This is page 2 of 3 for this task.

List Elements Fully

b. Performer removes cover of processor and cleans roller assembly with damp cloth or sponge, or removes roller assembly and washes with clean water:
  i) Handles rollers with care to avoid nicks or scratches which can affect film.
  ii) Removes all stains, hardened chemicals, or built up deposits.
  iii) Inspects rollers for nicks or scratches.

c. Performer inspects, wipes, or removes and washes other parts:
  i) May remove and wash roller racks. Is careful not to contaminate developer or fixer solutions by splashing.
  ii) Cleans and dries feeder tray.
  iii) Checks tanks for debris and other contaminants.
  iv) Checks pump switches.
  v) Checks dryer and developer filters; cleans or replaces as needed.
  vi) Removes dryer tubes and flushes with water. Replaces.
  vii) May check drive belts and alignment of parts.
  viii) Cleans squeegee sponges by washing with clean water, rubbing surfaces together and removing imbedded dirt particals.
  ix) For roll film processor, cleans out magazine, blowing out dirt particles.

d. Performer replaces roller assembly. Wipes off any spills on the exterior or interior of processor; makes sure feed tray is dry.

e. Reconnects machine to power supply when ready to warm up machine.

4. When performer inspects tanks with developer and fixer solutions and storage reservoirs, proceeds as follows:

List Elements Fully

a. Removes covers and inspects levels and appearance.

b. If the chemical solutions show evidence of debris or contaminants, performer drains the tanks:
  i) Shuts off water valve and opens tank drain valve(s). Allows tank(s) to drain.
  ii) Cleans out inserts and tank(s). Rinses with clean water and drains again. Closes main tank drain valve; opens water inlet valve.
  iii) Performer puts on eye protectors and rubber gloves. Follows manufacturer's directions to fill tanks using bottles of prepared developer and/or fixer solutions. Makes sure not to confuse with chemicals for hand processing. Avoids contact with mouth, eyes, hands, skin, or clothes.
  iv) If performer must mix the solutions, follows manufacturer's directions. Makes sure all chemicals are dissolved.
  v) While filling, performer checks to be sure that insert stoppers are not leaking.

c. If the storage reservoirs for the chemical solutions are low, performer refills as appropriate, following procedures for mixing as described above.

d. Performer may check replenishment rate according to manufacturer's directions.

e. Replaces covers.

5. When the water and chemical solutions have reached appropriate temperature, performer runs several appropriate test x-ray film sheets through processor to clean up any accumulated residue and to be sure there is no jamming:

TASK DESCRIPTION SHEET (continued)

Task Code No. 273

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
a. Turns on any switches such as automatic loader. b. Places test sheets in feeder tray or places sheets one at a time into insert opening until sheet is gripped by feeder rollers. c. Performer may check that film is being processed in standard amount of time set on time indicator. May adjust if needed. d. If there is any jamming, performer decides whether to investigate personally or to report to appropriate staff person. e. If there is no jamming, performer checks processed test films. If they are not properly processed and if any residue remains, performer continues running test sheets until the condition clears up. If problem persists, performer may decide to investigate personally or to report problem.	

TASK DESCRIPTION SHEET

Task Code No. 274

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Standard equipment and supply trays supplemented with items needed for specific procedures; carts placed for pick-up.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Procedure schedule for department; cards listed by procedure containing what is needed for prepared trays; standard treatment trays on carts; materials, instruments, and supplies in drawers; labels; pen; sterile towels, needles, syringes, etc.

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supply room staff or co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Adding predetermined instruments and supplies to prepared procedure trays, by ascertaining procedure to be prepared for; referring to cards listing items to be added for procedures; obtaining items from storage; adding to trays and/or carts; if appropriate, labeling carts by procedure; covering trays with sterile towels; placing for pick-up or bringing to designated location.

List Elements Fully

Performer is required to supplement standard trays for special treatment or examination procedures (to fit the needs of department) by adding non-medicinal equipment and supplies as a result of:

a. Regular assignment.
b. Request.

1. Performer reads list of scheduled procedures for that day or period or is told what procedure is involved.

2. Performer goes to carts on which equipment trays are placed, or requests tray from appropriate staff. May decide to label carts according to procedures to be done and does so.

3. Goes to location containing files on what equipment and supplies must be added to trays for particular procedures. Performer opens labeled supply drawers or cabinets and finds cards listing what equipment is required for each procedure.

4. Performer obtains the equipment listed and adds to trays and/or appropriate cart(s).

5. If tray(s) are to be used at a later time, covers with sterile towel(s).

6. Places trays or cart(s) in designated location for pick-up, or brings to appropriate examination or treatment room.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 275

This is page 1 of 4 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Subtraction masks prepared, processed and evaluated; subtraction prints prepared, processed and evaluated; second-order subtraction masks and prints prepared, processed and evaluated if ordered; radiographs, masks and prints placed for use or filing.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Requisition sheet or orders; light boxes and printing frame or contact printer; processed scout radiograph(s) and counterpart post-injection radiographs; unexposed subtraction and high contrast x-ray film; scissors; tape; work bench; safelight

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologist; darkroom worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing radiographic subtraction prints by preparing in darkroom using printing frame or contact printer for exposures and film processor; preparing subtraction mask from scout radiograph and subtraction film; preparing subtraction print by taping mask in register with post-injection radiograph and using subtraction film and taped combination in printer; evaluating and/or showing to radiologist; preparing second-order subtraction print on orders by using scout and first-order mask in register to prepare second-order mask; using first-and second-order masks in register with post-injection radiograph and film to prepare second-order print; placing for use.

List Elements Fully

Performer prepares radiographic subtraction prints as a regular assignment or as requested.

1. Performer may receive a series of scout (preliminary) radiographs in various projections and selected counterpart post-injection radiographs (taken after injection of a contrast medium) corresponding to the views shown in the scouts, or a single scout and its counterpart post-injection radiograph, with a request for subtraction print(s) orally or in writing.
   - a. Performer may match up each scout film with its counterpart post-injection film by placing on view boxes, checking patient identification and matching the forms outlined on the radiographs. Makes sure that the pairs include one film without contrast and one film with contrast for each projection.
   - b. Performer may check requisition or note the area of interest by observing the location of the contrast on the views.
   - c. May note any special orders for high contrast prints.
2. Performer prepares for the subtraction procedure:
   - a. If not already in darkroom, performer goes to darkroom. Does not enter while red light is on; if open,

OK-RP;RR.RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 275

This is page 2 of 4 for this task.

List Elements Fully

knocks to make sure that room is empty or can be entered. Closes and bolts door to darkroom. Makes sure that no white light is shining in darkroom from any source and that safelight is on. Makes sure that hands are clean and dry.

b. Obtains containers of unexposed subtraction film. May use the same specially prepared commercial subtraction film for both subtraction masks and prints or may use subtraction film for the masks and obtain x-ray film used for mammography or therapy localization if a high contrast record is requested. Checks that container(s) are for appropriate size film. Places on work bench.

c. Obtains scissors and tape and places on work bench.

d. Performer checks printing frame (with a glass front and a spring loaded back) or contact printer (which may incorporate several light sources for subtraction printing, duplication and viewing).Makes sure that glass front of printing frame or printer is clean.

e. Performer arranges the set(s) of scout and post-injection radiographs on the clean work bench in order. Proceeds as described below for each subtraction print requested.

3. Performer prepares the scout subtraction mask from the scout radiograph as follows:

a. Performer places the "scout" radiograph onto the print frame or the contact printer so that it is in contact with the glass top (front of printing frame). Makes sure to handle radiograph at edges only.

b. Performer removes a sheet of subtraction film from its container; handles only at edges and feels for emulsion-side indicator such as raised button or code notching in a given corner of film.

List Elements Fully

c. Places film over the radiograph with the emulsion side in contact with the radiograph. Is careful not to crease, buckle or apply pressure to the film while handling. Lines up radiograph and film sheet.

d. Sets contact printer or mechanical printer for appropriate number of seconds to obtain desired density (and sets contact printer for subtraction mode). Closes lid and activates exposure to produce a "positive" mask.

e. When the timer or signal indicates that exposure is completed, performer removes the exposed subtraction film and has it processed in automatic processor (or by hand) at once or decides to do personally. May have film marked with identification information after processing.

4. Performer evaluates the processed subtraction mask by placing on light box (or on contact printer on glass,using viewing mode),superimposed on the "scout" radiograph:

a. Performer notes whether the area of interest (the part of the film where the contrast is to be displayed on the post-injection film) is of a uniform gray density.

b. Judges whether the mask has been over- or under-exposed. If so, repeats preparation of mask until satisfied.

5. Performer prepares the subtraction print from the mask and post-injection radiograph as follows:

a. Performer uses light box or contact printer in viewing mode.

b. Places the counterpart post-injection radiograph on the lighted glass surface.

TASK DESCRIPTION SHEET (continued)

Task Code No. 275

This is page 3 of 4 for this task.

List Elements Fully

c. May trim the subtraction mask to provide an edge for taping.

d. Places the subtraction mask over the radiograph and aligns so that the structures are completely overlapped with no blurred edges (are in register).

e. Secures the mask to the radiograph with tape at one or two edges making sure to keep the two images in register.

f. Performer places the taped combination onto the print frame or on the contact printer so that the mask is in contact with the glass and the post-injection radiograph is facing up.

g. Removes another sheet of subtraction film, or special x-ray film for high contrast as described above and notes the emulsion side.

h. Places the film over the registered combination with the emulsion side in contact with the radiograph, handling carefully, and lines up the sheets.

i. Sets contact printer or mechanical printer for appropriate timing (3 to 4 times the exposure given to the mask). Sets contact printer to subtraction mode. Closes lid and activates exposure.

j. When the timer or signal indicates that exposure is completed, performer removes the exposed subtraction film and has it processed as described above. May have print marked with identification information.

6. Performer continues to prepare other subtraction prints if an entire set are to be evaluated.

7. Performer evaluates the processed subtraction print(s) by placing on light box (or on contact printer in viewing mode).

List Elements Fully

a. Notes whether the structures filled with contrast material are sharply distinguishable. Notes whether edges are blurred due to loss of register during the subtraction process; notes whether density is appropriate.

b. If so decided, repeats any earlier steps until satisfied.

c. If requested by radiologist or if in doubt about the quality, performer may have radiologist view subtraction print(s). (Makes sure that no unexposed films are out in the open before turning on lights or leaving.)

d. Performer notes whether to redo or to prepare second-order subtraction print(s) depending on radiologist's orders.

8. Performer prepares second-order subtraction prints from the "scout" radiograph, first order mask and the post-injection radiograph as follows:

a. Performer prepares a second-order subtraction mask by superimposing the first-order mask over the "scout" radiograph on light box and taping together after placing in register.

    i) Places the taped combination on print frame or contact printer so that the mask is in contact with the glass and the "scout" radiograph is facing up.

    ii) Places unexposed subtraction film over the combination with the emulsion side in contact with the radiograph.

    iii) Exposes for double the time used for the first-order mask.

    iv) Has second-order mask processed and identified as described above. Evaluates as described above.

TASK DESCRIPTION SHEET (continued)

Task Code No. 275

This is page 4 of 4 for this task.

List Elements Fully	List Elements Fully
b. Performer prepares the second-order print as follows: i) Places the first- and second-order masks on light box in register and tapes at edges. Trims second-order mask to match ii) Then places the taped and registered masks over the post-injection radiograph and registers. Tapes the masks to the radiograph with all three registered. iii) Places the taped combination on print frame or contact printer so that a mask is in contact with the glass and the radiograph is facing up. iv) Places unexposed subtraction film or special high contrast film over the combination with the emulsion side in contact with the radiograph. v) Exposes for double the time used for the first-order print; has the exposed film processed and identified as described above. vi) Evaluates and/or has radiologist evaluate as described above. 9. When subtractions are completed performer closes and replaces film cartons in bins or on shelves. Replaces other materials. 10. Performer makes sure that no unexposed film is in the open before turning on lights or leaving. (Does not do so while film is being processed if fogging of film may result.) 11. Performer may group the scout and post-injection radiographs with their respective subtraction masks and prints and any requisition sheets. May deliver to radiologist or place for filing or jacketing as appropriate.	

TASK DESCRIPTION SHEET

Task Code No. 276

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Machine shut down; problem investigated; decision made to repair personally or have done; minor repairs made to machine and/or chemical tanks replenished or refilled; repairs ordered if necessary.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Automatic x-ray film processing machine(s) and parts, water valves, power cords and outlets; timing controls; temperature thermostats and indicators; bottles of developer and fixer solutions; sink; cleansing cloths and sponges; rubber gloves; goggles; x-ray test film sheets; stoppers; pen; hand tools; out-of-order sign; information on repair service; phone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologic technologist(s); repair personnel; supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Making minor adjustments or repair on automatic x-ray film processor by shutting down machine and investigating source of problem; deciding whether to order repair or adjust personally; cleaning machine of debris or dirt; adjusting temperature or timing; tightening or aligning parts; draining and refilling or replenishing chemical solutions in tanks; unjamming x-ray film; discussing improper exposure of films to light; rechecking machine with test films; arranging for repair if necessary.

List Elements Fully

Performer inspects automatic x-ray film processing machine(s) and makes minor adjustments and/or calls for repairs as a result of:

a. Own decision to investigate.
b. Being informed of problem relating to machine functioning.

1. Performer tells anyone working in darkroom to stop feeding film into the machine, or asks co-worker to do so. Turns off the machine. Attaches out-of-order note. Makes sure that no unprocessed film is exposed to light in darkroom.

2. Performer judges where the machine problem may be located. Depending on expected problem, performer may remove the covers from the roller assembly, chemical and water tanks, and/or reservoirs, and/or may check temperature control of circulation system of tanks; may check timer.

3. Performer attempts to determine the source of the problem:

   a. If performer has noted or been told of poor film density, performer investigates replenishment of developer solution, level, temperature, and whether properly mixed or contaminated. May check light seal of processor.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 276

This is page 2 of 3 for this task.

List Elements Fully

b. If the film has not been transported, performer checks for jamming, dirty, warped or unaligned racks, turnarounds,or crossovers. Checks for tacky films in dryer section, incorrect temperatures, overlapping films.
c. If the films show scratches, streaks, or "pi-lines," performer checks for dirty or encrusted parts, rollers, water, air tubes, build-up of debris on rollers; checks seals on dryer air tubes.
d. If there is insufficient drying, performer checks temperatures,dryer thermostat controls, venting, hardening of film by chemicals.
e. If there have been noises from the machine, performer looks for loosened screws or other parts.
f. If there is fogging, performer investigates light sources.

4. If performer finds the source of the problem, decides whether to do minor repair personally or have repairs done. If performer cannot find the source of the problem, may decide to have repairman come.

If repairman is to be called, performer obtains name and telephone number of company or extension number of appropriate in-house repair person. Dials and asks to have repairman sent to fix the machine. May make record of call and place for reference. May report to supervisor.

5. If performer has decided to do minor repairs, may do any or all of the following:

a. If there is evidence of a build up of dirt or debris on the rollers or other parts,performer may remove roller assembly and wash with clean water. Handles rollers with care.

List Elements Fully

Inspects rollers for nicks or scratches.

Performer may clean, wipe or remove and wash roller racks, feeder tray, dryer and developer filters, dryer tubes, squeegee sponges, film magazine (for roll film). Makes sure feeder tray is dry; wipes up spills. Replaces parts or roller assembly when done.

b. If there is evidence of improper temperature for circulation system, chemical solutions,or dryer, performer readjusts thermostat or checks thermostat controls.
c. If there is evidence of incorrect timing, performer checks timer setting and readjusts as appropriate.
d. If there are problems with light seal, alignment of parts, drive belts, or loose parts, performer uses hand tools to correct alignments, tighten bolts, screws, sprockets, etc.,or make other adjustments.
e. If chemical solutions (developer and/or fixer) or water show signs of debris build up or contamination performer shuts off water valve and opens tank drain valve(s). Allows tank(s) to drain; cleans out tank(s). Rinses with clean water and drains again. Closes main tank drain valve; opens water inlet valves. Allows water to flow to appropriate level.

Performer puts on eye protectors and rubber gloves. Following manufacturer's directions,performer refills developer and/or fixer tanks using bottles of prepared solutions. Makes sure not to confuse with chemicals for hand developer. Avoids contact with mouth, eyes, hands, skin or clothes.

TASK DESCRIPTION SHEET (continued)

Task Code No. 276

This is page 3 of 3 for this task.

List Elements Fully

If performer must mix the solutions, follows manufacturer's directions. Makes sure all chemicals are dissolved. While filling, performer checks to be sure that insert stoppers are not leaking.

f. If the storage reservoirs for the chemical solutions are low, performer refills as appropriate, following procedures for mixing as described above. Performer may check replenishment rate according to manufacturer's directions. Replaces covers when done.

g. If performer finds that film is jammed, lifts out upper roller assembly; inspects for cause of jam and pulls out jammed film. Checks whether any emulsion has scraped off the jammed film onto rollers. If so, cleans rollers as described above. Replaces rollers and cover.

h. If there is a problem with exposure to light sources, performer may explain dangers of leaving film open to light in darkroom, may have safelight checked, or may try to arrange for better darkroom procedures, as appropriate. Performer may indicate to co-workers that problem lies with handling of their x-ray film or deterioration of intensifying screens.

6. After making minor repairs, performer turns machine back on. Performer runs several test film sheets (those designated for such use) through the machine to be sure no debris remains and to be sure that the machine is now operational.

If the original problem still persists, performer calls for repairs or has this done, as described above.

7. Performer informs appropriate co-workers of the radiographs which were

List Elements Fully

jammed or were in the machine when it was opened. (These need to be redone.) Removes out-of-order sign.

TASK DESCRIPTION SHEET

Task Code No. 277

This is page 1 of 2 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

In-patients and out-patients arriving for scheduled examination or treatment assigned to rooms in appropriate order; record of absent patients reported; requisition sheets and name cards distributed to scheduled technologists.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Department schedule sheet; requisition forms (request sheet, charge slip, control card, name card); pen; paper; staff assignment sheet

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Receptionists; scheduled technologists

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Assigning scheduled patients to procedure rooms in appropriate order by checking on patient arrivals; reporting missing patients; assigning patients to rooms based on special needs of procedure, time required, urgency, and order of arrival; recording; distributing requisition sheets to technologists assigned to rooms.

List Elements Fully

Performer checks on patients to be given (radiographic) examinations and assigns them to rooms and technologists.

1. Performer looks at schedule of patients due to receive examinations or treatments during the day. Notes the patients who are due to receive the types of procedures normally done in the hours covered by performer.

2. Performer pulls out the appropriate requisition sheets for the patients who are to have the type(s) of procedure for the next scheduled block of time.

3. Performer goes to the waiting area for in-patients and ascertains which patients are present and their order of arrival by checking with staff person there. Records which patients are absent.

   Performer goes to area where out-patients due for the given type of procedure are waiting and checks on their arrival with receptionist there; ascertains order of arrival. Records which patients are absent.

4. Performer leaves lists of patients that have not arrived with proper staff person in control area or notes on schedule sheet.

5. Performer reads the requisition sheets for each patient.

OK-RP;RR;BR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 277

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully

a. Performer notes the urgency of the request, indications of degree of illness of patient, and whether ambulatory or not.
b. Performer assigns patients to specific examination or treatment rooms based on the special equipment needed for the procedure and the availability of given rooms to accommodate patient's condition or procedure, the time involved for procedure, and the patients' order of arrival. May also consider the urgency of request as noted on requisition sheet.
c. Writes room numbers on requisition sheets. Performer assigns log numbers to patients to reflect order of arrival and writes on requisition sheets.

6. Performer detaches the request sheets and name cards (which show log and room numbers). Arranges in order by room number. Performer distributes the requisition sheets and name cards to the technologists assigned to the rooms. If necessary, consults a posted staff assignment sheet.

7. Performer returns the control cards and charge slips (also containing the log and room numbers) to the appropriate location in the control area.

TASK DESCRIPTION SHEET

Task Code No. 278

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Reason for in-patients' failure to appear for examination or treatment checked on and posted as appropriate; co-worker informed if someone is needed to transport patient; complaint on not reporting presented; co-worker informed of need to transport patient or reschedule if appropriate.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Department schedule sheet; pen; control board sheet; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Personnel on floor or wards who account for patients' whereabouts; co-worker or supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking on reasons for nonappearance of in-patients for examinations or treatment by telephoning wards or floors, recording reasons; presenting complaint if appropriate; posting reasons in designated locations; notifying proper co-worker(s) of need to send someone to transport and/or to reschedule patient(s).

List Elements Fully

Performer may have orders or may have decided to personally check on why in-patients scheduled for an examination or procedure were not on hand in the waiting area.

1. Reads the schedule sheet at the receptionist's desk and checks the names of all in-patients not present and accounted for who were scheduled for the procedures or treatments currently being done.
2. Notes patient(s)' floor and ward or room number.
3. Telephones wards or floors to find out why each patient has not yet arrived. If someone is needed to transport patient, informs proper co-worker.
4. Writes reason for delay or nonappearance on appropriate sheet and leaves in control board area or other designated locations.
5. If appropriate, may speak to ward or floor supervisor and request that frequent recurrances of patients not arriving be avoided. May request that notice of cancellations be made to department as soon as possible to avoid unnecessary delays.
6. If appropriate, informs co-worker of need to reschedule patient(s).

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 279

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Ward or floor personnel notified to ready and transport patients due for examination or treatment; messenger given information on patient to transport; decision made to send subordinate, or co-worker notified; record of non-appearances left on schedule sheet or appropriate location.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Department schedule sheet; telephone; paper; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Ward or floor personnel (nursing); department messenger; supervisor or co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Notifying ward or floor personnel to ready and transport in-patients who are scheduled for specific procedures at specific times, by checking schedule; telephoning information; having patient brought down, or deciding to send subordinate, or notifying supervisor of need to send someone; leaving record of non-appearances on schedule sheet or in appropriate location.

List Elements Fully

Performer calls wards or floors to request that in-patients be readied for a given type of procedure or treatment and be brought to the appropriate reception area at the proper time.

1. Performer reads schedule sheet for the day and notes the names of all the in-patients who are scheduled for specific examinations or treatments at any given time. May copy the names, floors, and ward or room numbers on a sheet of paper.

2. Allowing for the time needed to prepare and transport patients, performer calls patients' wards or floors; asks appropriate nursing personnel to prepare patients for transportation to department for procedure at indicated time.

   a. If told that patient will not appear, may note reason on schedule sheet or inform supervisor or co-worker.
   b. If performer learns that there is no one available on floor or ward to transport patient, performer writes out patient's identification information; gives to messenger or, if no messenger is available, may decide to have appropriate co-worker go.
   c. If messenger or co-worker informs performer that patient will not appear, may

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 279

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
note this on schedule sheet or inform supervisor. 3. Performer may leave sheet of paper with record of calls made, patients not appearing, and reasons in appropriate location.	

TASK DESCRIPTION SHEET

Task Code No. 280

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Radiation exposure film strip submitted for testing; new film strip placed in badge and put back on; source of excessive exposure discussed with supervisor; transfer to other work discussed; decision made at any time that excessive personal radiation exposure may have occurred.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Badge containing film strip which records radiation exposure; fresh film strip; container for "old" strips; container with "new" film inserts; letter about excessive radiation exposure; record of radiation exposure

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Participating in monitoring of personal exposure to radiation by periodically turning in and replacing film strip in badge worn by performer, or telling supervisor when performer thinks excessive exposure has occurred; discussing source of any excessive radiation exposure and possible need for transfer from work assignment if appropriate.

List Elements Fully

Performer is required to wear a radiation detection badge while on duty, to turn it in periodically, and to report any suspected excessive exposure.

1. Performer periodically (once a month) turns in film insert and receives new insert. May report to designated co-worker or to a specific location.
   - a. Removes film insert from badge; places in container labeled to receive "old" inserts, or gives to designated co-worker.
   - b. May sign record sheet or report of previous month.
   - c. Searches in container containing "new" inserts for new film insert (labeled with performer's name), or receives new film insert.
   - d. Places insert in badge and puts badge back on.
2. If report of prior month indicates that the film strip has been tested and shows excessive radiation exposure, or if performer receives letter to that effect, performer meets immediately with designated supervisor. Discuss how this came about, such as equipment malfunction, leaving badge where it could have been exposed, or any other possibility causing high radiation reading. Answers questions.

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 280

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
3. At any time during regular work the performer is expected to be aware of accidental excessive personal exposure. If performer decides that this may have occurred, notifies designated supervisor; submits film strip for check and proceeds as in step 2, as appropriate.	
4. Performer may conclude from a posted report, or prior month's record, or be notified that his or her cumulative radiation exposure has reached near maximum allowable safety levels. If performer decides or is notified that there is such a problem, discusses immediately with designated supervisor. May discuss transfer to work which does not involve exposure to radiation or other appropriate change.	

TASK DESCRIPTION SHEET

Task Code No. 281

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Pts.' identity checked against treatment and medication check list; arrival and departure times marked on sheets;missing check list information obtained and entered;labels indicating special conditions made out and attached to pts.;lists collected until end of day

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patients' treatment and medication (X-ray) check lists, ID wrist bands; telephone; pen; time stamp machine; index cards; tape

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; co-workers; ward personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking in-patients' identity against patients' treatment and medication check lists by checking identification bands; stamping arrival and departure times for procedures on check list; obtaining missing information for check lists; attaching cards to patients indicating special conditions.

List Elements Fully

Performer records in-patient's arrival and departure times on patient's treatment and medication check list in reception area for procedures, after checking identity.

1. Performer sits at a desk located at in-patient holding/reception area. When a patient is brought into this area, any co-worker accompanying patient stops at this desk.

2. Co-worker with patient gives performer the treatment and medication check list (X-ray check list) which accompanies each patient.

3. Performer looks at the patient's ID wrist band (containing patient's name, ID number, age, room number and floor). Compares with information on the check list.

   a. If patient's ID band is missing and performer judges patient to be alert and able to answer questions coherently, performer asks patient for the needed information. If performer judges that patient is not alert and might not be able to answer coherently, calls ward listed on check list and asks any co-worker available to come down and identify patient.

   b. If the wrong patient has been sent down, performer calls ward, explains, and asks to have the proper

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 281

This is page 2 of 2 for this task.

List Elements Fully

patient sent down and to have the patient who was sent down sent back to ward.

4. Once patient's identity has been checked, performer records the time of patient's arrival by stamping check list with time stamp machine.

5. Performer makes sure all necessary information is filled out on the check list. If any information is missing, performer arranges to obtain or does so personally:
    a. For missing medical information, calls ward and asks for missing information; enters on check list.
    b. For missing personal information, asks patient (if coherent) about allergies, etc., or calls ward; enters on check list.
    c. For missing clerical information, writes what is missing on back of check list.

6. If checklist indicates that patient is deaf, dumb, or blind, performer makes out an index card with this information and tapes to appropriate part of patient's clothing or body.

7. If check list indicates that patient is an isolation patient (may have an infectious condition) performer makes out an index card with this information and tapes to patient or patient's clothing. May notify co-workers to use isolation procedures when handling this patient.

8. Performer retains patient's check list at desk. Separates check lists into piles according to type of procedure being done.

9. When procedure has been completed, patient is brought back to the desk occupied by performer. Performer finds patient's check list and stamps with time stamp machine.

List Elements Fully

10. Performer or co-worker retains all check lists until the end of the day.

TASK DESCRIPTION SHEET

Task Code No. 282

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Out-patient escorted or transported to and/or from dressing room and/or waiting or treatment area; patient assisted in dressing or undressing; record made of locker used for patient's things; things returned.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Wheelchair; index cards; pen; locker; dressing gowns and robes

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any non-pediatric out-patient; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Escorting adult out-patients to and/or from dressing rooms, treatment rooms and/or waiting areas, by transporting if necessary; explaining what to remove and what to put on; assisting in dressing and undressing if needed; keeping record of belongings placed in lockers; and returning belongings to patient.

List Elements Fully

Performer assists out-patients in getting ready for, or leaving from, examinations, treatments or set-up procedures as a result of:

a. Request.
b. Regular assignment.

1. Performer goes to waiting room. Escorts ambulatory patients or transports wheelchair patients to dressing rooms according to sex, or to appropriate area.

2. Performer judges whether patient is unable to get undressed and put on hospital gown alone. If so, performer assists patient in removing clothes and donning gown.

3. Instructs patient to get undressed, to remove any metal objects (for radiographic examinations) and to put on hospital gown (and robe) as appropriate.

4. If clothes are to be left in dressing area, performer writes patient's name on an index card. Gathers patient's belongings and places in a locker. Writes number of locker on index card.

   Performer may keep card containing patient's name and number of locker or may give it to co-worker at appropriate desk.

5. Once patient is in hospital gown, performer escorts or

OK - RP;RR ;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 282

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
transports patient back to reception area to wait until called or to other designated location. 6. After patient procedures have been completed, performer escorts or wheels patient into dressing room or changing area to dress. Assists as before. Ascertains correct locker by using index card. (Obtains from co-worker or has card.) Returns belongings to patient. 7. After patient is redressed, may transport patient back to waiting area if appropriate, to scheduling desk, or to next designated location.	

TASK DESCRIPTION SHEET

Task Code No. 283

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Decision on whether dressing can be changed personally or needs RN; wet dressing reinforced or dry dressing changed; RN informed of need for change of dressing; ordering MD informed of what was done.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Old dressing; sterile gauze (pads); adhesive tape; scissors; patient's identification information; phone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient with dressing on wound; nursing personnel; ordering MD

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

On orders deciding whether wound of any patient needing change of dressing needs attention of RN or can be done personally; changing simple dry dressing or reinforcing wet dressing by removing old dry dressing; applying sterile gauze and tape to wound or wet dressing; informing appropriate personnel of need to change wet dressing; informing ordering MD of what was done.

List Elements Fully

Performer may be requested by MD to see that a patient's dressing is changed.

1. Performer goes to patient in location designated. Explains what is to be done. Examines dressing.
2. Decides whether the dressing requires the attention of RN or can be changed by performer (i.e. is a simple dry dressing).
3. If performer decides that an RN is needed, informs RN nearby or calls patient's ward, describes situation and condition of dressing. (Performer obtains information on patient's ward by checking patient's identification information.
4. If performer decides to change dry dressing, removes old bandage using scissors if needed. Carefully tears off adhesive tape. Discards dressing.
5. If wet dressing, performer reinforces or, if dry dressing, performer dresses by applying sterile dry gauze pad of appropriate size to wound. Cuts strips of adhesive tape and applies to gauze and skin.
6. Informs ordering MD about what was done.

OK-RP:RR:RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 284

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Portable and/or wall outlet units for oxygen, and/or suctioning checked for presence, supplies, functioning; missing, damaged or empty units reported; related supplies restocked and taped on units.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Portable and/or wall outlet units for oxygen, and suction; wrench; packaged nasal masks, connecting tubes, catheters; container of water; tape; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking presence and functioning of oxygen and/or suction equipment, and amounts of oxygen by checking whether units are in proper locations, checking oxygen pressure, contents, flow meter, and related supplies; deciding whether to have suction machine and/or drainage bottle washed; checking suction and presence of related supplies; reporting missing, empty or malfunctioning parts; restocking related supplies.

List Elements Fully

Performer checks that oxygen portable or piped outlet units and/or suction machines are in working order and ready for use periodically or after they have been used.

1. For suction or oxygen portable units, performer goes to designated locations where portable oxygen tanks or suction machine(s) should be located and checks that portable units are in their proper locations.

   If any units are missing, performer may try to locate in immediate area. If not found, performer telephones proper department and reports missing unit(s).

2. For either wall outlet or portable oxygen units:

   a. Performer checks that cylinder for oxygen is present as required by checking that color code and label are appropriate.
   b. Performer checks for supply and pressure by opening the on-off valve of the cylinder (may use wrench), listening for the sound of gas escaping and quickly closing.
   c. Performer checks contents by making sure that flow adjusting valve on the regulator is closed; then turns the cylinder wheel slowly, watching the needle on the contents gauge. Performer notes whether the cylinder reads at appropri-

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 284

This is page 2 of 2 for this task.

List Elements Fully

ate "par" pressure. Performer tightens valve wheel and flow adjusting handle. If the gauge reads below par pressure, performer labels the cylinder as empty.

d. Performer checks rate-of-flow meter by turning handle to full flow. Notes whether the meter registers the top rate on the meter. Performer closes flow adjusting handle.

e. Performer reports missing, mislabeled, empty, or below-pressure tanks, and/or malfunctioning meters or other damage to the proper department (inhalation therapy) by calling and/or filling out requisition form. Specifies contents and locations.

f. If tank is functioning, performer checks to see that a prepackaged nasal mask is attached (taped) to the tank. If missing or opened, performer obtains a fresh mask package and tapes to tank.

3. For portable or wall outlet suction machine:

a. Performer checks machine by noting whether it should be cleaned. May decide to clean or have cleaned. If performer finds that the drainage collection bottle contains matter, performer decides to wash or have it washed.

b. Performer plugs cord of portable unit into wall outlet. Turns on switch of machine. Tests for suction by checking suction outlet with finger to feel suction (or by inserting tip of tube in water and checking that suction is effective). Performer checks the trap and drainage collection bottles.

c. If machine is not functioning or collection bottle is missing or damaged, performer reports this to proper department by telephoning, filling out requisition, or both.

List Elements Fully

d. Performer checks to see that prepared packages with connecting tube and catheter are taped to each unit. If missing or opened, performer obtains fresh package(s) and tapes to unit.

TASK DESCRIPTION SHEET

Task Code No. 285

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Presence of emergency supplies checked; missing or short supplies reported to supervisor.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Emergency supplies in storage locations

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking for presence of emergency supplies in proper locations by observing and counting; reporting short supplies to supervisor.

List Elements Fully

Performer is responsible for periodically checking that emergency equipment is in place in department.

1. Performer goes to designated locations in department, such as procedure rooms. Checks for presence of specific emergency items (such as Ambu bags, emergency medications) as determined by department procedures. Performer may count the number of items of a certain type to see that appropriate number are present.
2. Performer reports absence of items or short supplies to supervisor.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 286

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Order for linens filled out; linens folded and placed in storage area; robes and gowns placed in dressing areas.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Order form; cart; fresh linens, fresh robes and gowns;
labeled storage shelves; dressing room shelves

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker in linen supply room.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Filling out standard order for linen, picking up, folding and storing; placing robes and gowns in dressing areas.

List Elements Fully

Performer is required to order, pick up, fold, and store linens for department periodically.

1. Fills in order form with standard order for department's linen needs. Signs name on form.

2. Performer takes order and cart to supply room (laundry). Presents order form to employee there. Places linens ordered on cart and returns to linen storage area in department.

3. Folds each piece of linen and places on appropriate shelf according to labels on shelves.

4. If robes and gowns are part of order, separates according to number of dressing areas (half to men's and half to women's areas) and places robes and gowns in individual dressing areas.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 287

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

   Patient's meal ordered as specified; meal picked up, delivered; decision made on whether to feed; patient fed; disposable items discarded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

   Telephone, cart; prepared food on tray; watch; utensils

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

   Ordering MD; any patient; kitchen worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

   On orders, placing order for specific dietetic meal; picking up, delivering, and feeding patient if so decided; discarding disposable items.

List Elements Fully

Performer may be requested to get lunch for a patient.

1. Performer receives the name of the type of diet to be obtained from MD and the name of the patient who is to receive the meal.
2. Performer places order by calling kitchen, naming diet requested, and asking when it will be ready for pick-up.
3. At appropriate time (checks with watch) performer takes cart to kitchen and places order tray on cart. Checks that regular items are present on tray.
4. Performer brings cart to patient. Judges whether patient needs to be fed or assisted. If not, brings tray to patient and leaves.
5. If so decided, performer may uncover dishes, cut up food, feed patient, or hold beverages to patient's lips.
6. Performer returns to patient after he or she has eaten. Discards disposable items. Places tray with non-disposable items to be picked up or decides to do personally.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 288

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Order for food items (nourishments) filled out, delivered; items picked up and stored in refrigerator or given to co-worker.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Pen; order form; cart; food items (nourishments); refrigerator

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Filling out and delivering standard order for food items for department; picking up, and placing food for storage in refrigerator and/or delivering to co-worker.

List Elements Fully

Performer may be required to order, pick up, and store food items (including juice and milk for coffee) to be used for employees and patients.

1. Performer fills out order form with food items (nourishments) and amounts required by department, according to standard order.
2. Performer obtains signature of supervisor or writes in own name and name of supervisor.
3. Takes order to kitchen.
4. After appropriate time, takes cart to designated location and places filled order on it. Returns to refrigerators in own department.
5. Places food items in refrigerator.
6. May take designated part of order to a specific section of department (such as pediatrics) and give to employee there for storage.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 289

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Baby fed with pre-prepared formula, burped and cleaned; recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's chart, check list or requisition sheet; bottle with prepared formula and nipple; bib, cloth, water; pen; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any infant or neonate; ward personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Bottle feeding a baby with pre-prepared formula by checking orders and formula; holding baby to support properly, holding bottle to avoid intake of air; burping, and cleaning face afterwards; recording.

List Elements Fully

Performer bottle feeds infant or neonate if feeding time has arrived while infant is in performer's department or if requested to do so.

1. Performer receives orders to feed neonate or infant patient, or checks chart, checklist or requisition sheet to note specific orders requesting or prohibiting feeding at regular times.
2. If patient will be fed, performer obtains the bottle with the patient's formula from accompanying articles and checks that it is for the patient; if missing, calls patient's ward and has proper formula sent.
3. Performer ties bib around baby's neck. Holds baby, supporting head, neck and back. Checks that opening in nipple is working, and inserts into baby's mouth, holding bottle so that baby does not suck in air from bottle. Removes nipple when baby is not sucking but mouth is open.
4. Burps baby occasionally by resting on shoulder, or on performer's lap, and patting baby's back.
5. After feeding, cleans baby's face with damp cloth and removes bib.
6. Records time and amount of food taken on chart, check list, or requisition sheet.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 290

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Soiled colostomy bag changed; area of opening cleansed and dried; patient cleansed and dried; soiled materials discarded; soiled equipment cleansed.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Soiled colostomy bag; soap or designated cleansing agent; warm water; basin; sterile gloves; sterile colostomy bag; adhesive sealer; scissors; towels; hospital gown; linens; antiseptic solution; receptables for discarded colostomy bag, soiled gown and linens; table

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient with colostomy; physician or co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Changing any patient's colostomy bag on orders by removing old bag, washing area with cleansing solution; putting on fresh sterile bag, cutting to fit and applying sealer; reassuring patient; cleaning soiled materials and supplying fresh gown and linens.

List Elements Fully

Performer may be asked to change a patient's colostomy bag and/or clean patient. May be told what cleansing agent to use.

1. Performer goes to patient and notes whether patient has soiled self, gown, examination table and/or equipment.
2. Explains that performer will change colostomy bag and/or clean patient. May decide to verbally reassure patient and make patient feel at ease.
3. Assembles materials: soap or other cleansing agent, water, basin, sterile colostomy bag, sterile gloves, scissors, towels, sealer for colostomy bag, hospital gown, linens, antiseptic solution (as determined to be needed from initial inspection).
4. Asks patient to be seated in appropriate place (on table or on toilet). May decide to assist patient.
5. Removes soiled colostomy bag and discards in receptacle. May don gloves to keep hands from being contaminated. May have patient remove soiled gown; if so, discards in appropriate receptacle.
6. Washes and cleans the area of the opening (stoma) with cleansing agent (usually soap) and warm water. May have been told not to use soap; if so, uses cleansing agent ordered. Dries area with towel.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 290

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
7. Using fresh pair of sterile gloves, puts on fresh colostomy bag. Cuts opening to fit stoma. Uses adhesive sealer to hold bag in place. Adjusts bag for proper fit. 8. May decide to wash other portions of patient's body if soiled. Dries with towel. 9. If original gown was removed, gives patient fresh gown to put on; may decide to assist patient. 10. If needed, performer washes soiled equipment or table with antiseptic solution; discards soiled linen and puts fresh linen on table. May ask co-worker to wash equipment.	

TASK DESCRIPTION SHEET

Task Code No. 291

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient's temperature taken, read, and told to ordering MD or RN.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Sterilized oral thermometer; watch ; receptacle for used thermometers; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any non-pediatric patient; MD or RN.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Taking and reporting temperature of any non-pediatric patient with oral thermometer on orders, by shaking down sterilized thermometer, inserting and leaving in patient's mouth for three minutes; reading; informing ordering MD or RN.

List Elements Fully

Performer may be asked to take a non-pediatric patient's temperature and report it orally.

1. Obtains sterilized oral thermometer. Shakes down to below 95°.
2. Asks patient to open mouth and places bulb of thermometer under patient's tongue. Has patient close mouth. Checks time with watch.
3. After three minutes, removes thermometer and reads temperature.
4. Informs MD or RN who requested temperature of temperature reading and/or records.
5. Places used thermometer in designated container.

OK-RP;RR.RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 292

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient's stool obtained, or ordering RN or MD told if not obtained; stool examined; decision made on appearance; ordering RN or MD told of opinion; stool specimen handed over or discarded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Bedpan; patient's fresh stool; specimen container; rubber gloves; tongue depressor

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient;
MD or RN

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Obtaining and examining fresh stool from any patient and reporting unusual or suspicious appearance, on orders, by requesting that patient evacuate; obtaining stool or reporting patient's inability to evacuate; examining stool and judging general appearance; reporting opinion to ordering RN or MD; discarding or turning over specimen to ordering RN or MD.

List Elements Fully

Performer may be asked to obtain and examine stool evacuated by patient and report if it looks unusual or suspicious.

1. Performer goes to patient with bedpan. Asks patient if he or she can evacuate; or tries to encourage evacuation in child.
2. If patient is unable to evacuate, performer informs ordering RN or MD.
3. If performer obtains stool evacuated by patient in bedpan, looks at stool. Decides whether it looks unusual or suspicious.
   - a. If so, places specimen into container using rubber gloves and tongue depressor. Tells attending RN that stool looks suspicious and gives specimen in container to RN.
   - b. If performer judges that stool is normal, performer tells ordering RN or MD and disposes of specimen.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 293

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Supervisor notified that performer desires personal meeting time; work and time preferences given; problems related to functioning on job raised and/or discussed; evaluation or written warning signed and/or refusal made to sign, and/or written response made.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Written warning, written evaluation if appropriate; pen/pencil.

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Attending personal meeting with supervisor on functioning or personal, work-related problems, by requesting meeting or being notified; discussing problems raised by supervisor, or raising problems with supervisor and discussing; acknowledging or writing comments on evaluation or disciplinary warning; expressing preferences for work time, assignments, training, etc.

List Elements Fully

Performer attends individual meeting with supervisor (for which regular time may be allocated) as a result of:

a. Own decision to raise personal work-related problems.
b. Notification from supervisor that a discussion of the performer's functioning or duties is desired or that performer's evaluation is to be reviewed.

1. Performer decides whether a meeting is necessary to discuss time off, vacation time, work assignments or personal problems related to the job. Notifies supervisor that time for meeting is requested or that allocated time is desired.

2. At meeting, performer discusses problems raised by supervisor or raises own problems and participates in discussion about what to do.

   a. If scheduling or work assignment is involved, performer explains personal needs and preferences.
   b. If work problem is involved, discusses. May read written warning and decide whether to sign. Signs if so decided.
   c. If own development is being discussed, participates in discussion of preferences for work, desire for training, or problems in giving directions to others, as appropriate.
   d. If performer supervises other employees, may dis-

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 293

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
cuss problems performer is having with performer's own subordinates. 3. If written evaluation of performer's work is to be reviewed: a. Performer reads the evaluation form. Asks questions of supervisor if anything is unclear. May discuss areas of disagreement. b. Performer decides whether he or she is willing to sign the sheet. If so, signs sheet. If not, performer indicates refusal to sign and returns sheet. c. If performer signs sheet, may decide whether he or she wishes to write comments on the sheet (for which space is provided). If so, writes comments.	

TASK DESCRIPTION SHEET

Task Code No. 294

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Subordinate assigned to transport patient, obtain documents or materials, or assist co-worker; assignment explained to subordinate and necessary information written or told.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Pen; paper; information on what is to be done and persons involved; requisition sheet

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Subordinate(s)

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Assigning subordinate and explaining assignment to transport patient, obtain materials or documents, or assist co-worker by evaluating need, choosing subordinate, explaining, and providing information needed.

List Elements Fully

Performer may be informed of need to send subordinate to transport patient, to obtain documents or materials, or to assist in some other way from time to time throughout day as a result of:

a. Information presented by subordinate.
b. Request from another co-worker or department.
c. Own judgment.

1. Performer notes or obtains information on what is needed and/or who is involved.

2. Selects subordinate to send, based on what is needed and who is available.

3. Tells subordinate what is to be done in detail or refers to standard procedures. May write out information if appropriate, such as identification information, or may fill out requisition sheet.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 295

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Issues for departmental meeting noted and raised; participation in discussion on department matters.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Pen; paper; personal notes

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Nurcing personnel assigned to X-ray department

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Participating in meeting of nursing personnel in X-ray department, by raising questions or problems, discussing or listening to information about department rules or functioning, new equipment, patient care,or general complaints.

List Elements Fully

The performer attends regular meetings of nursing personnel assigned to the X-ray department.

1. During intervening periods between meetings performer may mentally note problems or information which performer wishes to raise, or may make notations about these.

2. At the meeting performer may receive information and ask questions about or present problems in regard to:

   a. New department rules and regulations.

   b. The use of new equipment.

   c. Problems of patient care.

   d. Problems or complaints regarding departmental functioning.

3. Performer listens, raises issues and/or participates in discussions raised by others. May take notes as desired.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 296

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Decisions made on whether to send patient to emergency room; physician called; decision made on what first aid and care to give; first aid and care given; physician told of events.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Emergency cart with EKG machine, sealed tray of emergency medications and supplies, endotracheal tube insertion kit, defibrillator, prepared syringes, oxygen tank and mask, tongue blade, ambu bag, sterile bandages, packing, tourniquet, splints, forceps; blanket; watch; thermometer; sphygmomanometer; pen; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient needing first aid; co-workers; physician.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Providing first aid in X-ray department emergency by determining nature and severity of symptoms, calling MD, and deciding whether to send patient to emergency room; doing so; deciding what first aid or care to give; giving care with first aid for heart, respiration, bleeding, fracture, shock, or convulsions; informing physician of what was done.

List Elements Fully

Performer must be prepared to administer first aid and emergency care if an emergency should arise while any patient is in the performer's department.

1. If appropriate, may ask co-worker what has happened. Examines patient to determine the nature and severity of the most serious symptoms. Calls physician or has this done.
   a. Checks for breathing, heart beat, bleeding, signs of shock, serious breaks or fractures.
   b. May have emergency cart brought; may take EKG readings; may take vital signs; may call for suction machine, oxygen, cardiac arrest team (if there is one).
   c. Decides whether to send patient to emergency room. If so decided, arranges for patient to be sent or has this done.
2. If patient has not been sent to the emergency room, decides what first aid and/or emergency care to apply while waiting for physician to arrive. May ask any co-worker to help with any emergency procedure decided upon, or to bring any supplies needed for the appropriate procedure.
3. If so decided, performs any of the following procedures:
   a. If patient's heart beat is weak or has stopped, may follow procedures for cardiac conditions such as op-

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 296

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
ening airway, inserting endotracheal tube; administering closed chest cardiac resuscitation, oxygen; may take EKG and apply defibrillator; may inject prepared intracardiac stimulant, as warranted. Uses materials from emergency cart. b. If patient has trouble breathing, may administer oxygen or air using oxygen tank and mask or ambu bag; may remove any foreign objects from mouth; may clear airway using finger, tongue blade or inserts plastic oral airway if so decided. May administer artificial respiration. c. If patient has serious bleeding, may attempt to stop this by applying direct pressure or sterile packing as appropriate. May apply tourniquet if major vein or artery is severed. d. If patient is suspected of having serious break or fracture, may place patient in position to minimize damage. e. If patient appears to be in shock, keeps patient warm, elevates legs, lowers head. f. If patient is in convulsions, lies patient in appropriate safe position; puts cloth or something soft between patient's teeth. Helps prevent patient from choking or swallowing tongue. 4. When physician arrives, performer reports what has happened and what emergency care has already been administered. Prepares to assist. 5. Performer may ask co-worker to replace materials used or decides to do so personally.	

TASK DESCRIPTION SHEET

Task Code No. 297

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Control punch card for automatic serial cassette changer checked for ordered sequence or sequence ordered for new card; card checked; test run arranged for; card titled; card placed for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Radiologist's orders; punch cards for control of serial changer; paper; pen; telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologist; clerical staff persons

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Obtaining and checking keypunch control card for serial cassette changer as ordered, by finding card and checking punches, or ordering card, checking punches, and having test run made; writing sequence on card and placing for use.

List Elements Fully

Performer obtains keypunched control card for use with serial cassette changer when requested (for use in appropriate radiographic procedure).

1. Performer is informed by radiologist of the number of films to be taken, the per second intervals, and the number of sets to be taken. Records.

2. Performer goes to storage location for keypunched control cards and searches for a card with the required sequence.

   a. If performer finds such a card, checks to be sure that card is not mutilated.
   b. If a usable card is not present, performer writes request or orally requests card from appropriate clerical person. Waits until card is punched.
   c. Performer checks card to be sure that it is the correct sequence by checking the holes punched on the card for the correct sequence of numbers. (Reads the numbered column and checks that each hole is punched at the correct row for the number.)
   d. For a newly punched card, performer gives to appropriate staff person; has card tested to be sure that it is operative. After card has been successfully tested, writes the sequence across the top of the card.

OK-RP:RR:RR

6. Check here if this is a master sheet..(v)

TASK DESCRIPTION SHEET (continued)

Task Code No. 297

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
3. Performer places the control card in the appropriate location for use with control panel for automatic serial radiography.	

TASK DESCRIPTION SHEET

Task Code No. 298

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Written MD orders obtained for medication to be taken orally; patient explained drug use, side effects,and questioned on allergy; medication obtained, measured out and administered;proper narcotics forms filled out; record entered.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD's orders,or patient's treatment and medication check list,or requisition sheet; narcotic control form, wasted narcotic control form; pen; medications in supply areas; key to narcotics supply; containers for administering medications; measuring implements

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to receive medication orally; accompanying adult if pediatric patient; MD; co-workers; supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Administering medication orally to any patient according to MD's orders by obtaining and measuring out proper medication, checking on patient allergy; explaining use and/or side effects to patient; administering; filling out and signing proper forms if narcotic or regulated drug; recording medication given.

List Elements Fully

Performer administers medication taken orally based on MD's written or oral orders.

1. Performer is requested to administer medication orally, or reads patient's requisition sheet or treatment and medication check list.

   If MD's oral orders call for narcotic or regulated drugs, performer may fill out MD's prescription or appropriate form and obtain MD's signature.

2. If MD's written orders call for narcotics or regulated drugs, obtains key to locked supply closet; selects proper medication; relocks and returns key. Other medication is obtained from unlocked supply areas.

3. Checks expiration date on medication; checks for signs of deterioration; arranges to discard if appropriate.Selects currently usable medication.

4. Using calibrated cup or container, performer measures, counts,or pours out the amount called for.

5. Performer brings medication to patient, if liquid, in cup; if pill or powder, brings water. Performer explains name and purpose of medication and possible side effects if any. Asks patient about allergy to medication.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 298

This is page 2 of 2 for this task.

List Elements Fully

If patient reports allergy, performer reports this to ordering physician.

If patient has no allergy to medication, asks patient to drink or swallow medication (and water if appropriate). If pediatric patient, performer may explain to accompanying adult how to help administer medication.

Watches to make sure medication has been swallowed.

6. Performer shows any leftover amount of narcotic or regulated drug to MD or supervisor; discards used cup or container and leftover medication.

7. If medication was narcotic or regulated drug, performer fills out narcotics control sheet with information called for, such as date, dosage removed from supply, dosage administered, patient's identification and time dosage was administered, and signs sheet.

   If any amount of the narcotic or regulated drug was accidentally wasted by dropping or contamination, performer signs out for the additional dosage needed. Performer also fills out a "lost narcotic" form. Indicates which narcotic was wasted, date, time. Obtains signature of supervisor and signs form.

8. After medication has been administered, performer records medication, dosage, time and date on requisition sheet, check list or order form, and signs name. May inform MD that medication was administered.

9. Performer attaches copy of "lost narcotic" form to narcotics control form if appropriate. Delivers copies of forms to appropriate locations.

List Elements Fully

10. Takes any contaminated narcotic or the remains of wasted narcotic or its container to pharmacy, with copy of appropriate form.

TASK DESCRIPTION SHEET

Task Code No. 299

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Written MD orders obtained for subcutaneous or intramuscular injection;patient screened for contraindications; allergy; decision made whether to inject; if not, reported; injection prepared; patient explained use and side effects; injection administered; narcotic forms filled out; record entered; side effects reported.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD's orders,or patient's treatment and medication check list,or requisition sheet; narcotic control form, wasted narcotic control form; pen; medications in supply areas; key to narcotics supply; sterile needles, syringes, caps, and bottles; alcohol, swab; bandaids; syringe destruction device; measuring implements

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient to receive subcutaneous or intramuscular injection; accompanying adult if pediatric patient; MD; co-workers; supervisor.

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Administering subcutaneous or intramuscular injection for any patient according to MD's orders by obtaining medication and filling sterile syringe with proper amount of medication; checking for contraindications, allergy;informing MD if type or dosage is in doubt; advising patient of purpose and side effects of drugs; choosing injection site; injecting according to sterile procedure; filling out and signing narcotic regulation forms; recording medication given; checking and reporting side effects.

List Elements Fully

Performer administers medication given as intramuscular or subcutaneous injection.

1. Performer is requested to inject patient with medication or reads patient's requisition sheet or treatment and medication check list.

   If MD's oral orders call for narcotic or regulated drug, performer may fill out MD's prescription on appropriate form or medication card and obtain MD's signature.

2. If MD's written orders call for narcotics or regulated drugs, obtains key to locked supply closet; selects proper medication; relocks after medication has been obtained. Performer goes to appropriate unlocked supply areas for other medications.

3. Performer checks expiration date on medication. Checks for signs of deterioration; arranges to discard if appropriate. Selects currently usable medication.

4. Performer prepares medication for injection:

   a. If the medication is prepackaged, performer inserts sterile needle through stopper of bottle; injects amount of air equal to volume of medication to be withdrawn; draws liquid into syringe; expels air from syringe; covers point of needle with sterile cap.

DK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 299

This is page 2 of 3 for this task.

List Elements Fully

If prepacked with syringe and needle, expels air and caps.

b. If the medication is not prepackaged prepares as follows:
   i) If medication is a powder, performer obtains sterile bottle containing a given amount of powder; using sterile syringe, injects air equal to the amount of medication to be administered into bottle of sterile water; draws up indicated amount of sterile water into sterile syringe to dissolve powder; squirts this into bottle with powder; mixes with powder; turns bottle over and draws appropriate amount of mixture into syringe. Expels air;covers tip of needle with sterile cap.
   ii) If medication is a liquid, performer uses sterile needle and sterile syringe; injects appropriate amount of air and draws up proper amount of medication into syringe; expels air; covers tip of needle with sterile cap.

5. Performer brings prepared injection to patient. Performer explains name and purpose of injection and possible side effects if any. Performer checks patient about allergy to the medication and considers whether there are any possible mistakes or contraindications in regard to the dosage ordered.

6. If performer considers the type of medication or dosage to be inappropriate, already given, or possibly in error, or if performer discovers allergy, performer may decide not to inject. Reports this to ordering physician. (Performer may refuse to inject.)

7. If performer decides to inject as ordered and site of injection has not been specified, performer decides where to inject based on size of dosage, type of medication, patient's age, and size.

List Elements Fully

8. Uncovers the part of body to be injected or asks patient (or adult with child) to uncover. Wipes skin with alcohol swab. Inserts needle; pulls back slightly on plunger and checks that there is no blood. If blood is obtained, removes needle and cares for puncture site. Reinserts with new needle. Injects medication. Withdraws needle and places in appropriate container. Wipes puncture with alcohol swab. May apply band-aid.

9. If warranted by type of drug or newness of patient's exposure to drug, asks patient to remain to see if there are any side effects or allergic reactions. Calls MD if this occurs.

10. Performer shows any leftover amount of narcotic or regulated drug to MD or supervisor and discards.

    Destroys used disposable syringe by breaking it into unusable pieces with syringe destruction device. Discards pieces and used swab.

11. If medication was narcotic or regulated drug, performer fills out narcotics control sheet with information called for, such as date, dosage removed from supply, dosage administered, patient's identification, and time dosage was administered. Signs sheet.

    If any amount of the narcotic or regulated drug was accidentally wasted by dropping or contamination, performer signs out for the additional dosage needed. Performer also fills out a "lost narcotic" form. Indicates which narcotic or drug was wasted, date, time. Obtains supervisor's signature and signs form.

TASK DESCRIPTION SHEET (continued)

Task Code No. 299

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
12. After the medication has been administered, performer records medication, dosage, time, and date on requisition sheet, check list, order form, or immunization form, as appropriate, and signs name. May inform MD that medication was administered.	
13. Performer attaches copy of "lost narcotic" form to narcotics control form if appropriate. Delivers copies of forms to appropriate locations.	
14. Performer takes any contaminated narcotic or the remains of wasted narcotic or its container to pharmacy, with copy of appropriate form.	

TASK DESCRIPTION SHEET

Task Code No. 300

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable,)

Accumulated check lists checked for completeness of information; sent or taken to office.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Accumulated patients' treatment and medication (X-ray) check lists; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker(s)

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking and submitting accumulated patients' treatment and medication check lists for in and out time stamps by obtaining, checking, asking for missing information and entering; arranging to take to designated office.

List Elements Fully

Performer checks and disposes of the accumulated piles of patients' treatment and medication check lists (X-ray check lists).

1. At end of day, performer goes to desk to obtain accumulated check lists(in piles according to procedure)or is given the piles by a co-worker.
2. Performer examines check lists to be sure that each was stamped with arrival and departure times. If any such information is missing, questions co-worker(s) and writes in information needed.
3. Performer takes or asks co-worker to take the check lists to appropriate office.

OK-RP;RR;RR

6. Check here if this is a master sheet..(✓)

TASK DESCRIPTION SHEET

Task Code No. 301

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Baby diapered; recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's chart or check list; soiled diaper and container; baby's clothes; soft topped table; cotton balls, antiseptic solution; lotion or vasaline and/or corn starch or talcum; fresh diaper (cloth or disposable); pins; receptacle

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any infant or neonate

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Diapering a baby by checking orders, removing clothes and soiled diaper, cleansing; rediapering; redressing; recording.

List Elements Fully

Performer may diaper a neonate or infant as a result of:

a. Request by co-worker.
b. Regular assignment.
c. Own decision to do.

1. If appropriate, performer may check patient's check list or chart to discover any special remarks on diapering procedures such as materials to use. Follows these or standard procedure.
2. Performer assembles articles to be used.
3. Lies baby on back on soft, protected surface. Removes clothes as appropriate and discards in proper receptacle.
4. Performer uses cotton balls and antiseptic to clean baby where soiled. Uses specific cleanser if ordered.
5. Performer dries and applies lotion, vaseline and/or corn starch or talcum as appropriate.
6. Folds clean diaper into appropriate shape and pins into place or uses fresh disposable diaper and pins or tapes.
7. Redresses baby if appropriate. May record on check list or chart.

OK-RP;RR ;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET

Task Code No. 302

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Call placed and/or message delivered for patient or at request of co-worker.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Telephone, pen, paper

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; co-worker; relatives or friends of patient

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Placing or making call and delivering non-medical message at patient or co-worker's request, by obtaining information and number, dialing, asking for requested person, and giving telephone to patient or relaying message.

List Elements Fully

Performer may be asked to place a call for a patient or make a call for a patient relaying patient's message.

1. Performer goes to patient who wishes to make or have call made, or goes to co-worker requesting that call be made for patient. Performer inquires what is wanted. Notes:
   a. Telephone number.
   b. Person to be called to phone.
   c. Message to be delivered, if any.

   If, in course of discussion, performer is requested by patient to relay medical information, performer may explain that he or she cannot do so.

2. If appropriate, performer uses phone near patient or wheels patient to phone; dials number; asks for person requested; identifies self and tells who is calling. Gives phone to patient. Replaces when patient is done.

3. If appropriate, performer places call; asks for person requested; identifies self and relays message. Performer may then deliver return message to patient.

4. Informs patient or co-worker that message was delivered and any answer, if any, or indicates that call was placed.

OK-RP; RR; RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 303

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient given food and/or drink as ordered; amount and time recorded; amount and time of feces and/or urine excreted recorded; urine and/or stool evaluated for suspicious signs; abnormal specimens reported, and portion shown.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

MD's orders, or pt.'s chart or check list; solid or liquid food as ordered; measuring implements; intake-output form or index card; pen; bedpan or container for urine and/or feces; specimen bottle for urine; container for feces specimen; tongue depressor; rubber gloves.

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; physician; co-worker(s)

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Arranging, measuring and recording food intake and excretory output as ordered, by arranging to have patient given amount of food and/or drink ordered; recording times; recording time and amount of urine and/or feces eliminated; noting whether urine and/or feces look suspicious and reporting abnormal appearance.

List Elements Fully

Performer may be asked to note and record food intake and excretory output over a limited period of time (such as time while patient is awaiting a special procedure).

1. Performer may receive oral orders to record intake and output, or reads patient's treatment and medication check list to determine what food or drink is to be given and the amounts and what to record with respect to output.

2. Performer has co-worker place order for food or drink, pick it up and deliver it, or has co-worker fill order from food supplies on hand in food storage area.

3. When food and/or drink is brought, performer measures out the proper amounts, or checks that the amounts are as ordered. Performer may have co-worker feed patient.

4. Performer fills out an intake-output form or index card, recording the patient's identification information and the time, type and amounts of food ingested.

5. Performer gives patient a calibrated container or bedpan for eliminating urine and/or feces and/or instructs patient to note time and amount of urine and feces evacuated, or has co-worker encourage patient to defecate and report back.

OK-RP;~~RR~~;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 303

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
6. Performer goes to patient at the end of the predetermined period of time and asks for bedpan, if previously given, or receives report of co-worker. Performer questions co-worker or patient about the time when patient urinated and/or evacuated. Records on index card or intake-output form. Performer asks about or notes the amount of urine and/or feces evacuated and records. 7. If urine and/or feces are available, performer decides whether urine and/or feces look unusual or suspicious or asks co-worker to do so and bring sample of suspicious specimens. 8. If specimens look suspicious, performer pours some urine into specimen bottle and/or takes small specimen of feces using rubber gloves and tongue depressor and places in container. Calls physician or shows to physician. May record. Disposes of remainder. If specimens are not judged to be suspicious, performer disposes of them or has them disposed of.	

TASK DESCRIPTION SHEET

Task Code No. 304

This is page 1 of 4 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Emergency cart checked for presence, dates and par levels of medicinals and for functioning of equipment; medicinals restocked; malfunctioning equipment reported.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Check list for emergency cart items; cards for preparing tray contents; emergency cart with prepared injections, prepackaged injections, containers of medications, prepared sterile treatment trays, flashlight, storage shelf with supplies, defibrillator, portable oxygen unit and mask, wrench, portable EKG unit, EKG paper, electrode medium, gauze, saline solution; storage areas for drugs and supplies; labels; pen; tape; syringe destruction device; telephone; order forms

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers in departments supplying or repairing equipment for emergency cart

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Readying emergency cart by checking for presence, par amounts and expiration dates of medicinals and treatment trays; restocking prepared injections and medicinal supplies; reporting incomplete or damaged articles or trays; checking functioning of oxygen, defibrillator and EKG equipment; reporting malfunctioning, expiration of equipment or short supplies; restocking with materials as needed.

List Elements Fully

Performer checks equipment and supplies of department's emergency cart and readies for use:

a. As regular assignment.
b. After it is used for an emergency.

1. Performer checks that all medicinal items are present on the cart and are not expired. Consults a check list for items, amounts, and replacement periods and/or index cards with needed information:

   a. Performer regularly prepares injections which must be freshly prepared periodically or after use (e.g. lidocain, a local anesthetic):
      i) If appropriate, checks label of injection on cart to see if fresh injection must be prepared.
      ii) If needed, obtains ampule of drug (lidocain) in correct quantity, sterile needle, and syringe, from storage areas. Obtains label, pen, tape and sterile cap.
      iii) Breaks ampule; inserts sterile needle and draws up proper amount into syringe; expels air; covers point of needle with sterile cap.
      iv) Writes out label with drug's name, dosage, date and time prepared, and signs name. Attaches label to syringe.
      v) Brings prepared injec-

OK-RP:RR :RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 304

This is page 2 of 4 for this task.

List Elements Fully

tion to emergency cart. Removes expired or used syringe and attaches freshly prepared injection by taping in place (or placing in place) in predetermined location on cart.

  vi) Performer discards expired medication by squirting medication into sink; uses a syringe destruction device or otherwise breaks syringe and discards parts.

b. Performer regularly discards expired prepared solutions or medical supplies in containers; replenishes used, damaged or short supplies:
  i) Checks for presence of all prepared solutions or containers of medications. As appropriate, checks labels on prepared solutions and on containers to see whether dates are expired; checks whether solutions are deteriorated or containers damaged, and checks whether containers show minimum needed quantities (par levels).
  ii) Performer notes which prepared solutions or containers need replacement due to use, breakage or expiration.
  iii) Performer obtains needed medications from supply areas. Makes sure these are not expired. Discards damaged or expired medications as above;replaces all medications as needed by placing or taping in designated locations.
  iv) Performer replenishes any drug solutions if below required levels by obtaining needed drugs from supply area, preparing and refilling or replacing as appropriate. May prepare labels if appropriate.

  If performer notes that supplies are running short, may

List Elements Fully

decide to request that supply areas be restocked.

c. Performer checks for presence, dates of expiration and completeness of sterile prepared treatment trays (e.g. for laryngoscopy, tracheostomy, etc.).
  i) Checks that all trays are present (and sealed if appropriate). Notes which are missing or expired (checks stickers).
  ii) Checks that all components are present (may use index cards listing items). Notes whether blades fit on handles, that correct assortments and sizes of parts are present, that sealed packages are intact. Checks that items such as lights on instruments are working. Notes which are missing or need replacement.
  iii) Performer reports which trays or items on trays are missing, expired,or need replacement to appropriate department (central supply). May phone or fill out requisition order, or both.

2. Performer checks that all apparatus used for emergency care that are on or attached to the cart are functional and properly stocked with supplies:

  a. Performer checks mechanical devices such as flashlight to see that they are operating or whether they are damaged.
  Obtains fresh batteries from supply area and replaces, or calls appropriate department to replace or repair damaged items.
  b. Performer checks the operation of the defibrillator (apparatus used to counteract heart fibrillation by application of electric impulses to the heart) and readies it for use:

TASK DESCRIPTION SHEET (continued)

Task Code No. 304

This is page 3 of 4 for this task.

List Elements Fully

1) Performer checks that power is available by plugging machine into wall outlet, turning on power switch and noting whether the light in the machine goes on. If not, tries another outlet to make sure that it is the machine and not the outlet which is not functioning.
ii) If light goes on, performer checks power control by rotating knob for wattage rate and noticing whether the needle indicator responds to the movement of the knob. Turns power off.
iii) If control knob is functioning, performer uses antiseptic soap and water to clean paddles.

iv) Performer tests paddles by covering each with gauze soaked in saline solution. Performer turns knob to high control setting and holds the paddles together; then turns power on. Performer checks whether appropriate noise is heard and whether the needle indicator moves back to 0 and then up to the high power setting. Performer shuts off machine, unplugs, wipes the paddles, and replaces machine on cart.
v) Performer checks sticker to determine whether the machine is due for calibration.
vi) If the machine is not functioning for any reason, or if it is due or overdue for calibration, performer notifies the proper department by phone, fills out requisition, or both; may obtain a replacement at once.

c. Performer checks the portable oxygen unit attached to the cart:
   i) Checks that cylinder is correct color and labeled as oxygen.

List Elements Fully

   ii) Checks for oxygen supply and pressure by opening on-off valve (may use wrench) and quickly closing, allowing dust to blow out and listening for the sound of gas escaping.
   iii) Performer checks contents by making sure flow adjusting regulator is closed; then turns cylinder valve wheel slowly, watching needle on contents gauge. Performer notes whether cylinder reads at 100 pounds pressure, a higher "par" reading, or more. Performer tightens valve wheel and flow adjusting handle. If less than 100 pounds or par requirement, was read, performer labels cylinder as "empty."
   iv) Performer checks rate-of-flow meter by turning handle to full flow. Notes whether the meter needle registers the top rate on the meter. Performer closes flow adjusting handle.
   v) Performer reports empty or below pressure tank, malfunctioning meter, or other damage, to the proper department (inhalation therapy) by calling and/or filling out requisition form.
   vi) If tank is functioning, performer checks to see that a prepackaged nasal mask is attached (taped) to the tank. If missing or opened, performer obtains a fresh mask package and tapes to tank.

d. Performer checks the portable EKG machine attached to the cart:
   i) Performer checks that power is available and machine is in working order by plugging machine into wall outlet and turn-on power switch. Presses start button and observes whether

TASK DESCRIPTION SHEET (continued)

Task Code No. 304

This is page 4 of 4 for this task.

List Elements Fully	List Elements Fully
paper roller and writing needle move. If not, performer may try another outlet until it can be determined if machine is functioning. ii) Performer checks standardization of machine by pressing special button and noting whether the needle movement and tracing is within acceptable designated range. Turns off machine, unplugs. iii) Performer checks that the electrodes are all present and intact. iv) If the machine is not functioning for any reason, performer notifies the proper department by phone, fills out requisition, or both. v) Performer checks to make sure that machine is equipped with a supply of electrode pads or other medium for the electrodes. Checks to see whether there is sufficient cardiograph paper in the machine. If paper or electrode medium is missing or in short supply, performer obtains from storage area. Places paste medium or electrode pads in container on cart, and threads new paper into machine as appropriate. 3. After the cart is checked, if the cart is missing items which must be repaired or replaced, performer may obtain substitute items, or notifies co-workers of what is missing and where to get a cart if emergency should arise in the interim.	

TASK DESCRIPTION SHEET

Task Code No. 305

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Aides, LPN's, RN's, technologists in diagnostic radiography shown and explained patient care and related tasks; trainees evaluated for readiness to do tasks under direct supervision, observed and criticized; trainees evaluated for readiness to do tasks without direct supervision; spot checked; questions answered; opinions given; evaluations reported or noted informally.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patients' requisition forms; materials and equipment needed for patient care tasks in diagnostic radiography

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Subordinates or co-workers to be trained in patient care procedures in diagnostic radiography; supervisors of staff being trained; any patients involved

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Providing informal clinical training in patient care for non-MD personnel in diagnostic radiography by demonstrating procedures, explaining what is being done, answering questions; deciding when persons can perform tasks under direct supervision; observing and correcting; deciding when tasks can be done without direct supervision; spot checking and correcting; advising as requested or as deemed necessary; informally noting or reporting evaluations.

List Elements Fully

Performer provides informal clinical training to subordinates and/or co-workers in patient care procedures and use of related equipment for diagnostic radiography as a result of:

a. Request or assignment to train new employee, or employee newly assigned to department or performer's job title.
b. Own observation of employee's work and own decision that training is needed.
c. Request of employee who has questions about work.

1. Performer provides demonstration, explanation, informal evaluation and supervision in caring for patients in diagnostic radiology in such areas as handling patients, nursing care of patients receiving department's services, assisting in procedures, partial examinations, recording, specimen taking, preparation of medications and supplies, emergency care, administration of medications, dealing with patients, and related activities.

2. If performer is making a new presentation of any task, performer may select times, patients, and procedures to demonstrate; performer may train while carrying out own tasks. When performer's own tasks are involved, explains presence of trainee to patient and requests permission to proceed with trainee present.

   a. Performer explains to trainee what will be taught.

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 305

This is page 2 of 2 for this task.

List Elements Fully

b. Performer may narrate the steps, may explain what is being done, or may explain the basis for decisions and actions.
c. Performer may decide to solicit questions to find out what the person being trained understands, may answer questions, or may elaborate on the explanation of what is being done, concentrating on the relevant skills and knowledges.
d. Performer decides when person being trained may do activities under supervision.

3. Performer may decide that a person has observed sufficiently and has a clear enough understanding of a task procedure to carry out all or part of it under close, direct supervision. Performer asks the person to do all or part of the task procedure. Performer remains at the side of the patient and watches the person perform the assigned activity.

   a. Explains own presence to any patients involved while observing. Performer decides whether the activity is being done properly, if there is a specific problem, if there is a need to demonstrate the task procedure again, explain an approach or attitude, or both, and does so.
   b. Performer may comment on the performance, encourage, or correct as deemed necessary, or do this later.
   c. Performer may decide to intervene and take over the task procedure, explaining what was done incorrectly at that point or later.
   d. If decision is to demonstrate again, performer will redo and have the person being trained observe, or the performer may have the person repeat the task procedure until it is done properly.

List Elements Fully

   e. Performer may decide which tasks or aspects of tasks can be done by the person being trained without direct supervision and inform proper supervisors, note for own use, and/or tell this to person being trained.

4. Performer may decide to spot check someone operating without direct supervision, or receive request by person to help handle a specific problem. Performer proceeds as in steps 2 or 3 as appropriate, observing, noting areas needing improvement, determining nature of problem, assisting, giving opinions, answering questions, providing further instruction or reinforcing correct work. Suggests areas for improvement.

5. Performer informally notes the extent of learning or proficiency of person being trained throughout the training:

   a. May make personal notes for use in later evaluation meetings or in discussion with supervisor of persons being trained.
   b. May decide to discuss performance at any time.
   c. No formal records are kept on what was taught, or on trainees' progress.

TASK DESCRIPTION SHEET

Task Code No. 306

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Evaluation of subordinate's work entered on evaluation form(s); presented to appropriate subordinate, supervisor, or co-worker.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Evaluation forms; employees' folders; personal notes; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; co-worker; subordinates

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Formally evaluating subordinates' work by filling out descriptive and/or rating-scale evaluation forms, by assembling relevant notes, folders, and records; reviewing; writing out comments and answers to questions and/or choosing scale values or descriptors; presenting to subordinates and/or supervisor.

List Elements Fully

Performer periodically evaluates the work of subordinates in a formal manner by filling out one or more types of evaluation form.

1. A standard or institutional form may be filled out which requires the performer to make written evaluations and be prepared to discuss these with the person involved.

2. A form using rating scales may be filled out (such as an ABC evaluation in which performer checks off or fills in appropriate grades, letters, numbers, or checks off descriptions of the individual's performance in a given category.)

3. Performer receives or obtains the appropriate forms, and gathers any notes or records on subordinate's work and attendance. Performer may obtain the subordinate's folder. Performer reviews materials.

4. For standard or institutional forms performer:

   a. Fills in answers to the questions asked in phrase or sentence form as appropriate. (May refer to preprinted guidelines for filling out the evaluation.) Performer may write in additional evaluative comments in spaces pro-

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 306

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
vided on the form or as deemed appropriate. b. Performer may obtain the signature of a supervisor and/or sign form. c. Performer arranges to have person being evaluated read the evaluation (such as at or before a personal meeting). 5. For rating scale form, performer: a. Chooses the appropriate rating for each category, filling in letters, numbers,or checking off descriptors, as appropriate. b. Performer signs and gives completed form to appropriate staff person. 6. Performer records dates of evaluations in each subordinate's personnel folder.	

TASK DESCRIPTION SHEET

Task Code No. 307

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Personal meeting called and held with subordinate on work-related problems; decisions made, information received, verbal warning issued and discussed; written warning presented; evaluation discussed; forms distributed as appropriate.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Subordinate's personnel files; disciplinary and/or evaluation forms; record forms; pen; duplicating equipment

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Subordinate; supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Conducting a private personnel meeting with subordinate by assessing seriousness of problems; arranging for meeting; discussing work-related problems, recommending improvement, solutions to problems, training; arranging for and writing written warning; recording and distributing forms as appropriate.

List Elements Fully

Performer meets with subordinates in individual meetings to discuss work problems or evaluations that are to be raised with specific subordinates, or if specific subordinates wish to have such meetings to raise questions.

1. Performer decides whether it is desirable to meet with each given subordinate at allocated times for each (to discuss scheduling, vacation, lunch, or break time preferences, work assignments, interpersonal work problems, or problems of work performance and/or absenteeism, lateness, or abuse of lunch or break time). A verbal or written warning may be involved, or an evaluation form may be ready to be discussed with performer.
    a. Performer reviews relevant records and assesses seriousness of any problems.
    b. Performer informs subordinate involved that meeting is needed at appropriate available or scheduled time.
    c. Performer may receive request from subordinate that he or she wishes to use time available for a meeting to discuss a work-related problem.
2. Performer greets subordinate at time of personal meeting in designated location.
3. If meeting was requested by subordinate, performer asks about or listens to the problem, request or complaint.

OK-RP:RR:RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 307

This is page 2 of 2 for this task.

List Elements Fully

Considers the issue, asks for further information and discusses what can or should be done. May decide to take some appropriate action. Discusses or explains to subordinate. May record.

4. If meeting was called to discuss subordinate's preferences, scheduling or assignment, performer obtains needed information; discusses or explains as appropriate; and makes any notes necessary or fills out appropriate records.

5. If meeting was called to deal with a work, discipline,or interpersonal problem, performer presents the problem, explains and/or discusses:

   a. Performer may decide to show subordinate any written records involved, and does so.
   b. Performer may indicate that subordinate will receive instruction in a problem area.
   c. Performer may indicate that a formal verbal warning has now been presented and record; may explain next steps should situation not improve.
   d. Performer may decide that meeting is unsatisfactory or, that a verbal warning having been issued earlier, the situation must be reported to performer's supervisor. If so, may indicate this to subordinate.

6. If performer decides on written warning, performer makes out draft of written complaint. Makes copy. May give original to supervisor and place copy in subordinate's file.

   Performer may be asked to discuss with own supervisor and does so. If permission is granted to go ahead, performer writes up written warning, signs and arranges for delivery to subordinate with copy kept in folder. At meeting, asks subordinate to sign, and if appropriate, write out written comments; but accepts subordinate's right to refuce to sign. Has own supervisor sign.

List Elements Fully

7. If meeting involves review of written evaluation of subordinate, performer asks whether subordinate has read it or waits while it is being read. Discusses with subordinate.

   Performer encourages subordinate to sign evaluation. Accepts subordinate's right not to sign, and indicates subordinate's right to write out own comments if evaluation has been signed.

8. Performer records the events of the meeting, and arranges to have copies of the forms involved circulated, delivered, or placed on file, as appropriate.

TASK DESCRIPTION SHEET

Task Code No. 308

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

ECG and pressure monitoring equipment set up, standarized; patient's ECG monitored; emergency signs reported at once; film placed for processing.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Requisition sheet;electrocardiograph and/or multichannel machine with oscilloscope,audio, printed or film recording capabilities,hook-up channels for blood pressure,synchronization with pressure injector,cineradiography equipment;stopcock,transducer;synchronization cables;electrodes;electrode pads;hospital gown,gloves,mask; scissors;lead apron;cardiograph paper;pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Physician,radiologist in charge;charge nurse; any patient;radiologic technologist;cardiac or special procedure team

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Setting up and monitoring any patient's electrocardiogram during special procedure, by reviewing orders; setting up equipment for oscilloscope,audio, paper or film recording of cardiograms, multichannel monitoring including arterial or heart pressure, synchronization with cineradiography, pressure injector; standardizing equipment; determining changes to report; monitoring; reporting significant changes in ECG and/or pressure; removing equipment when ordered; placing film for processing.

List Elements Fully

Performer sets up for and carries out continuous monitoring of a patient's electrocardiogram (ECG) as a result of:

a. Regular assignment.
b. Request.

1. Performer receives or obtains the ECG requisition form, patient's identification information and any appropriate clinical information on a patient scheduled for a procedure requiring ECG monitoring,such as angiography, or is assigned to ECG monitoring for a given procedure as a result of assignment on a team, such as angiography suite team.

    a. If appropriate, performer checks the examination called for and the purpose. Notes the procedure room assigned and its location. Checks the time for the scheduled procedure. If appropriate,notes the time to report for preliminary preparations or instructions.

        i) Performer reads patient's name, identification number, sex, age, weight, and height.
        ii) Notes name of attending radiologist, other physician in charge, anesthesiologist and/or

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 308

This is page 2 of 3 for this task.

List Elements Fully

charge nurse or supervisor, other members of team.

b. When appropriate, reads any written orders or notes physician's oral instructions. May contact staff to receive more detailed orders, information or to check on type or availability of equipment.

  i) Notes type of equipment to be used, whether permanent film or paper ECG record will be made, whether ECG will be recorded with and coordinated to cineradiography filming, will be synchronized to trigger pressure injection equipment at precise point in cycle.
  ii) Notes whether blood pressure will be monitored and/or recorded during catheterization procedure on multichannel equipment.
  iii) Notes appropriate sterile procedures required, appropriate personal shielding for the examination.

c. Performer checks own clothing to make sure that performer is in compliance with institutional rules for safe, sanitary dress for the equipment, room to be used and the procedure involved.

2. At appropriate time, performer goes to procedure room to prepare equipment and materials for the procedure:

a. Performer may report to the charge nurse or supervisor. Checks name of patient. Asks about specific precautions in dealing with patient or equipment.
b. Performer may receive a clean hospital gown, cotton "boots," cap and mask. Dons these before entering sterile area or touching sterile surfaces.

  i) Washes hands as and when appropriate.
  ii) Carries out appropriate steps to maintain the integrity of the sterile areas or surfaces.

List Elements Fully

c. Checks that everything needed for ECG monitoring is available in room or has materials assembled.
d. May decide to clean ECG equipment or arranges to have this done.
e. Makes sure that machine is adequately loaded depending on type of machine, with paper or film.
f. Positions equipment as appropriate for viewing of oscilloscope image, listening to audio signal (if used), with leads properly attached and out of the way of other team members who will be engaged in other aspects of procedure. Puts on leaded apron.

3. Performer standarizes the ECG machine using appropriate dial(s):

a. Adjusts visual display on oscilloscope screen so that the tracings are appropriately centered and clear. Adjusts sweep dial to provide image of appropriate number of waves.
b. May adjust audio heart rate controls as appropriate.
c. If electrocardiogram tracings will be recorded on paper or film, performer standardizes as appropriate. May set marker button to identify each cardiogram lead by code number or marks by hand.
d. May check that other modes such as pressure monitoring channel are operative.

TASK DESCRIPTION SHEET (continued)

Task Code No. 308

This is page 3 of 3 for this task.

List Elements Fully

4. Performer determines which leads will be used for monitoring and the sites at which electrodes will be applied on patient's body.
   a. If not already done, has patient prepared for ECG monitoring and electrodes applied, or decides to do personally.
   b. When the equipment has been set up and patient has electrodes in place, performer checks that ECG monitoring equipment is functioning properly.
      i) Introduces self to patient if coherent; checks patient's identification against requisition sheet. Explains what will be done.
      ii) Performer may notify appropriate physician when ready. Notes orders based on MD's review of visual, printed and/or audio displays. Adjusts controls as ordered. Has electrodes repositioned if so ordered or decides to do personally.
      iii) Notes the appearance of the wave patterns on oscilloscope screen, electrocardiograph paper and/or audio sounds of heart rate or rhythm.
      iv) If not already done, determines what ECG changes are to be brought at once to physician's attention.
   c. If blood pressure will be monitored, performer notes at what point in procedure stopcock and transducer will be attached to the catheter. Determines what to look for in display of pressure monitoring and what changes are to be brought at once to physician's attention.
   d. When patient and equipment have been appropriately set up, performer sets equipment to continuous monitoring mode.
   e. If appropriate, at proper time during the procedure, performer may connect synchronization cable from cineradiography camera equipment to ECG equipment.
   f. May connect cable from ECG equipment to automatic pressure injector. Depending on orders, may set equipment to inject at specified point in successive cardiac cycles, or may assist while this is done by co-worker (radiologic technologist).

5. Throughout procedure and until told to terminate, performer pays attention to the visual, audio or written cardiogram of patient and/or pressure tracings if this is being monitored by performer.
   a. Notes any changes of pattern as directed.
   b. Immediately notifies physician when any known emergency signs or unusual reading occurs, based on predetermined guidelines.
   c. On orders, performer may reposition electrodes, reset machine using appropriate controls.

6. When informed that ECG monitoring is to be terminated, performer may remove electrodes, discard disposable pads and turn off equipment, or has this done. Has patient's skin cleaned where electrodes were attached.

7. If ECG record has been made on film (but not on cine film) performer may advance film on take-up spool; cuts film and removes cartridge from camera. Attaches appropriate identification information and arranges to have processed as appropriate.

TASK DESCRIPTION SHEET

Task Code No. 309

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Issues and/or information for meeting with subordinates noted and raised; meeting called; discussion on departmental matters led and participated in; demonstrations of procedures presented; appropriate issues referred to personal meetings; meeting led to voting on resolutions; follow-up on decisions planned.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Pen; paper; personal notes; information to be presented

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Subordinates in department

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Calling and participating as supervisor in meeting of subordinates in department, by calling meeting; raising questions or problems; leading discussions and listening to information about department rules or functioning; demonstrating new equipment or procedures; discussing problems of patient care, or general complaints; giving information; leading meeting to point of voting on resolutions; planning follow-up on decisions.

List Elements Fully

Performer calls and presides at regular meetings of subordinates in the department as a result of being in charge of the department.

1. During intervening periods between meetings performer may mentally note problems, information, announcements, or new procedures or techniques which performer wishes to raise, convey, teach, or may be expected to cover; may make notations about these.

2. Performer arranges to have staff called for meetings if not held regularly. May prepare and distribute agenda.

3. At the meeting, performer may receive information, ask questions about, present problems and information, or may demonstrate and teach procedures in regard to any or all of the following:

   a. New department rules, regulations, and announcements.
   b. The use of new equipment or procedures.
   c. Problems of patient care and related activities.
   d. Problems or complaints regarding departmental functioning, staff functioning and/or work loads.

4. Performer leads the discussion, raises issues, listens, instructs, demonstrates and/or participates in discus-

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 309

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
sions raised by others. May take notes as desired. May explain reasoning or theory involved in new procedures. If appropriate, performer transmits information resulting from other meetings. 5. Performer chairs meeting and leads the group in coming to agreements and resolutions requiring action, using common rules of order. 6. If any questions raised are not relevant to the entire staff, performer may ask subordinates to bring up personal problems at meetings with individuals. 7. Performer considers results of meetings and plans own work to carry out any decision affecting performer.	

TASK DESCRIPTION SHEET

Task Code No. 319

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

   Print coater applied to photographs; prints placed for drying; identification information marked if appropriate; prints placed for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

   Developed photographs requiring coater; identification information; print coater and applicator; mounting sheet with adhesive strip; marking pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

   Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

   Applying print coater to photographs, by obtaining materials; applying coater; placing to dry; writing identification information; placing dried prints for use.

List Elements Fully

Performer applies print coater (fixer) to photograph(s) taken with a camera that uses a film type which requires such coating as a result of:

a. Decision to do after having taken photographs.
b. Request from co-worker.
c. Regular assignment to accumulate and coat pictures after they are developed during the day and placed for coating.

Photographs may be taken in connection with C.T.T. scanning, ultrasonography, or any other procedure where a visual display is photographed.

1. Performer obtains print coater, applicator, devices for holding photographs while coater is being applied.

   a. Performer may obtain a sheet on which to temporarily mount photographs. If so, prepares by laying on work bench and removing strip from adhesive surface which will hold photograph(s).
   b. Performer obtains photograph(s) to be preserved and any identification information attached. If photograph has curled, performer straightens by carefully drawing over a straight edge. Handles only at edges of film throughout procedure.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 319

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
2. Performer places the photograph(s) in position for coating. a. Uncaps coater and prepares applicator for use as appropriate to type of container and applicator. Avoids any contact of coater on skin or clothing. b. Applies coater with firm, overlapping strokes. Checks to be sure all the edges and corners are covered. Is careful to avoid scratching with edge of applicator. Allows to dry before handling. c. Recaps coater. d. Places photographs in appropriate location for drying. e. May write identification information supplied with each photograph on edge of each photograph after it is dry. Uses appropriate marking pen. Makes sure not to stack or store prints face to face. 3. Places dry photograph(s) for viewing, filing or jacketing as appropriate. If responding to request, may bring photographs to co-worker who requested that coater be applied.	

TASK DESCRIPTION SHEET

Task Code No. 327

This is page 1 of 1 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Film strip submitted for testing; new film strip placed in badge; badge put back on; source of excessive exposure discussed with physicist; decision made on whether excessive exposure has occurred and what to do.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Badge containing film strip which records radiation exposure; fresh film strip; posted exposure record sheet

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Physicist

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Participating in monitoring of personal exposure to radiation by periodically turning in and replacing film strip in badge; evaluating posted exposure listings; discussing source of any excessive exposure found and/or what to do if personal exposure levels are near safety maximum.

List Elements Fully

Performer is expected to wear a radiation detection badge while on duty, to turn it in periodically, and to report any suspected excessive personal exposure.

1. Performer periodically (once a month) brings badge to appropriate staff employee.
   a. Removes film insert from badge; gives to employee.
   b. Receives new film insert; places in badge, and puts badge back on.
2. Performer is expected to check a posted list of radiation exposures based on the film strips. If the performer determines from the list that he or she has had excessive radiation exposure, or is notified, performer meets with physicist to discuss how this came about, whether this was due to:
   a. Equipment malfunction.
   b. The badge having been left where exposure accumulated.
   c. Excessive personal exposure.
3. Performer is expected to be aware of whether his or her cumulative radiation exposure has reached near maximum allowable safety levels and to be prepared to discuss a transfer to work which does not involve exposure.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET

Task Code No. 354

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient's identification and specific needed records ascertained; order for records transmitted orally and/or on requisition sheet; arrangement made to have records picked up, delivered,or taken from files; completed set of appropriate patient records placed for use as appropriate.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Schedule sheet; patient information; appropriate patient records; phone; requisition sheet; pen; paper

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Subordinate and/or clerical personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Obtaining patient records for use in examination, procedure, treatment or conference by determining the pt.records required;checking for presence of documents needed; ordering what is needed from appropriate department orally and/or with requisition sheet; arranging to have records delivered; placing complete set for use as appropriate.

List Elements Fully

Performer obtains medical documents and other records as required for specific purposes such as examinations, special procedures, treatments or case conferences as a result of:

a. Regular assignment.
b. Request by co-worker.
c. Own decision to do after absence of document is noted.

1. Performer may have a written or mental check list of what case materials must be available for a given patient visit, procedure or case conference,such as patient's medical chart, reports, radiographs, EKG, laboratory test results, request for services, medical reports, consent forms, treatment record forms, billing or accounting forms, etc.

2. Performer may consult a daily schedule to obtain the names of patients whose records will be required; performer notes name,ID number,log number, floor, ward or room number, as appropriate.

   Performer may be told which of the documents are missing and be given the appropriate patient information. Performer may know what information is needed based on own task requirements.

3. If assembling patient's records, performer may first routinely check that all records needed have been sent;

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 354

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
notes those that are missing; or performer may routinely initiate requests for the needed documents. 4. Performer calls the appropriate department, indicates the appropriate patient information, and requests that the required documents be sent, and/or performer fills out appropriate requisition forms requesting the documents. May sign. 5. Unless documents will be delivered, performer decides whether to send subordinate to obtain documents or to do so personally. Gives requisition sheet to subordinate who is to be sent or indicates what is needed and has subordinate go directly to files, as appropriate. 6. When performer has received the required record(s), places with other records needed, inserts in envelope, clips to chart, as appropriate; places for use in the procedure to be carried out.	

TASK DESCRIPTION SHEET

Task Code No. 439

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Standard and current penetrometer test films compared and assessed; orders given on compensatory change in technical factor settings.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Standard penetrometer test films, current and prior test films of kVp and/or mA selector settings for a given x-ray machine; pen; paper; view boxes

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologic technologist; radiologist(s); physicist

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Ordering or approving changes in technical factor selector settings to compensate for a change in quality of x-ray machine output by comparing penetrometer standard test films with current test films; evaluating perceived differences; estimating discrepancy in settings; considering recommended changes; ordering change as decided.

List Elements Fully

Performer approves or decides on change in technique to compensate for a change in quality of x-ray machine output.

1. Performer is shown a standard radiograph of penetrometer test for a given x-ray machine (displaying contrast and density at each kilovoltage or milliamperage selector setting with other factors controlled) and the current test radiograph made for the given machine. May also be shown prior test films. Places films on view boxes.

2. Performer visually compares the density and/or contrast in the standard test film with the density and/or contrast currently produced with the same technique.

   a. May evaluate radiologic technologist's presentation regarding the difference in the density or contrast now obtained (compared with test film) and the technologist's recommendations for compensation in the selector settings to be used to provide the equivalent in the actual output (and the perceived density and/or contrast).

   b. Performer may question technologist on the technical factors used for the test, related test conditions, and the film pro-

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 439

This is page 2 of 2 for this task.

List Elements Fully

List Elements Fully

cessing to be sure that the discrepancy between the standard radiograph and the current test film is due to machine output change rather than an error of radiographic exposure or processing.

c. Performer visually compares the marked settings on the test film and current film. May note the new settings which correspond to areas of equal density and/or contrast on the standard film; may note the numerical difference in the current kVp settings and the standard film. May note the difference between the films (at constant mAs and kVp with mA varied) to assess the magnitude of the difference. Notes whether there is a constant discrepancy across all selector settings for kVp or mA.

d. Notes whether the performer's perceived compensatory difference is the same as that suggested by the technologist. May ask opinion of another radiologist about the perceived difference. May evaluate prior test film; may discuss with physicist.

3. Performer decides whether the perceived decline or change in machine output affecting density or contrast warrants selector compensation (and posting on the technique chart for the machine).

   a. Performer decides whether the perceived difference in density and/or contrast will have (or has had) an effect on the diagnostic quality of the radiographs produced.
   b. Performer considers whether any change in the mA output should be controlled by a change in time or the mA selected to produce an equivalent mAs.

4. Performer indicates to radiologic technologist whether to maintain constant technique settings, whether to authorize a compensatory change on the technique chart as suggested by the technologist, or orders own preference for new adjustments in selector settings. May record orders.

TASK DESCRIPTION SHEET

Task Code No. 490

This is page 1 of 2 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Patient immobilized by mummying; co-worker informed when ready; patient reassured.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's chart, requisition sheet; gown; mask; clean sheet; x-ray or examination table; table pads; pins; masking tape

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Infant or young child patient; co-worker; physician; accompanying adult if present

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Mummying or wrapping an infant or young pediatric patient by obtaining, preparing materials following sanitary procedure; folding sheet; placing patient on sheet; folding sheet under and over limbs on either side; continuing wrapping; securing; indicating when completed as appropriate; reassuring patient.

List Elements Fully

Performer immobilizes an infant's or young child's body and extremities by mummying (wrapping) as a result of:

a. Request.
b. Regular assignment.
c. Decision to do personally in order to proceed with an examination, treatment, and/or injection.

1. Performer notes purpose of the immobilization so as to allow for needed access, such as to head and neck. May check chart or requisition sheet, or ask.

2. If not already done, performer prepares x-ray or other table with padding as appropriate.

3. Based on patient's condition, takes appropriate sanitary precautions such as use of isolation technique, personal use of sterile gown and mask. Obtains appropriate materials.

4. Performer places clean sheet lengthwise across longest dimension of x-ray or examination table. Then folds sheet so that it is as wide as the length of the patient from axillae to knees or ankles, depending on access needed in procedure to follow.

5. Performer goes to pediatric patient and picks him or her

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 490

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
up, reassuring and soothing patient. If patient is accompanied, by a guardian or attendant, explains what is being done. a. Lays patient in supine position crosswise on table in center of the folded sheet, with axillae at the top edge of the sheet. b. Performer places patient's arms and legs in proper alignment, and folds half the sheet over one arm and leg, and draws it through under the patient's back and opposite-side limbs so that the covered arm and leg are held against patient's body. c. Performer lifts the same end of the sheet and brings it forward across patient's body so that the opposite arm and leg are also drawn against the patient's body. Carries the end across chest, and under patient's body, with remaining fabric lying under patient and spread out on side of table opposite the side started from. d. Makes sure that restraint is snug, not tight, and that limbs are still in proper alignment without discomfort to patient. e. Performer takes the other end of the sheet and wraps it in the same direction around the immobilized body. May fasten ends with safety pins or loops masking tape in a spiral manner from shoulders to end of lower extremities. 6. If appropriate, indicates to co-worker or MD that patient has been immobilized. Makes sure child is not left unattended. Comforts as needed.	

TASK DESCRIPTION SHEET

Task Code No. 520

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient prepared for ECG; electrodes applied as ordered; electrodes removed when ordered.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Requisition sheet; electrocardiograph machine; electrodes; electrode pads; amputee clamp; alcohol pads, gel, tape; hospital gown, gloves, mask; cleaning solution to remove gel; towels; lead apron

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Physician, radiologist in charge; charge nurse; any patient; ECG, radiologic technologist(s); cardiac or special procedure team

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing any patient and attaching electrodes for electrocardiogram monitoring, by reviewing orders; attaching electrodes as appropriate; removing when so ordered.

List Elements Fully

Performer prepares patient and applies electrodes for continuous monitoring of a patient's electrocardiogram (ECG) as a result of:

a. Regular assignment.
b. Request.
c. Decision to do personally after setting up ECG equipment.

1. Unless performer has already set up ECG equipment, performer receives or obtains the ECG requisition form, patient's identification information and any appropriate clinical information on a patient scheduled for a procedure requiring ECG monitoring, such as angiography, or is assigned to prepare patient for ECG monitoring as part of a given procedure as a result of assignment on a team, such as angiography suite team.

   a. If appropriate, performer checks the examination called for and the purpose. Notes the procedure room assigned and its location. Checks the time for the scheduled procedure. If appropriate, notes the time to report for preliminary preparations or instructions.

      i) Performer reads patient's name, identi-

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 520

This is page 2 of 3 for this task.

List Elements Fully

fication number, sex, age, weight, and height.

ii) Notes name of attending radiologist, other physician in charge, anesthesiologist and/or charge nurse or supervisor, other members of team.

b. When appropriate, reads any written orders or notes physician's oral instructions.

i) May contact staff to receive more detailed orders, information.

ii) Notes appropriate sterile procedures required, appropriate personal shielding for the examination.

c. Performer checks own clothing to make sure that performer is in compliance with institutional rules for safe, sanitary dress for the equipment, room to be used and the procedure involved.

2. At appropriate time, performer goes to procedure room to prepare equipment and materials for the procedure:

a. Performer may report to the charge nurse or supervisor. Checks name of patient. Asks about specific precautions in dealing with patient or equipment.

b. Performer may receive a clean hospital gown, cotton "boots," cap and mask. Dons these before entering sterile area or touching sterile surfaces.

i) Washes hands as and when appropriate.

ii) Carries out appropriate steps to maintain the integrity of the sterile areas or surfaces.

List Elements Fully

c. Checks that everything needed to prepare patient for ECG monitoring is available in room or has materials assembled.

d. Performer determines which leads will be used for monitoring, and the sites at which electrodes will be applied on patient's body. Notes whether any sites must be shaved first.

3. Performer checks patient's identity and introduces self to patient if coherent. Explains what is to be done in simple language. Reassures patient. If electrode site is to be shaved, checks that this has been done or arranges to have done.

4. When informed that patient is ready to be connected to ECG monitoring equipment (at appropriate or predetermined point in preparatory procedures or examination) goes to where patient is positioned on examination table to apply leads.

a. May turn on equipment and check that visual, audio, and any paper or film recording of cardiograms are operative.

b. Performer attaches the ECG monitoring electrodes as appropriate for the procedure based on specific orders for placement or standard institutional practice:

i) Attaches electrode pads to elecrodes using snaps or clips.

ii) Makes sure patient is comfortable.

iii) Depending on sites to be used, performer may expose areas on left arm, right arm, left leg, possibly chest. Wets areas selected with electrode pads, gel, or alcohol pads.

TASK DESCRIPTION SHEET (continued)

Task Code No. 520

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
iv) Attaches electrodes to the extremities selected. Attaches or straps electrode pads using tape, gel or pre-gelled or alcohol pads to selected sites, using the number of electrodes ordered or standard orders appropriate for the procedure. If patient is amputee, uses clamp to attach electrode to stump. c. When electrodes have been attached, performer notifies appropriate staff person who will monitor ECG (unless it is performer). d. If performer will remain in room during radiography or fluoroscopy puts on leaded apron. 5. If appropriate, when informed that ECG monitoring is completed, performer may remove electrodes, discard disposable pads. May clean patient's skin where electrodes were attached with appropriate solution. Wipes area dry. May inform staff person when this is done.	

TASK DESCRIPTION SHEET

Task Code No. 521

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Digital or manual pressure applied to arterial or venous puncture site; emergency signs reported; dressing ordered; patient self-monitoring reinforced.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Sterile gloves, gauze; stool; marking pen; clock or watch

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any patient; physician; co-worker; special procedure team

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Applying digital or manual pressure to any patient's arterial or venous puncture site as ordered, by taking over from physician; applying fingertip or fist pressure for appropriate amount of time; checking bleeding and clot using sterile technique; reporting problem or arranging for dressing; reinforcing self-monitoring instructions to patient.

List Elements Fully

Performer may apply digital pressure to a puncture site such as after catheterization of artery or vein on orders as a result of:

a. Request while present for special procedure.
b. Regular assignment as part of special procedure team.

Performer will already be dressed in appropriate garments in keeping with sterile requirements for procedure.

1. Performer notes physician's orders on length of time to apply pressure and when to evaluate puncture site and arrange to have pressure dressing applied. Prepares to take over from physician in application of manual pressure to artery, or to apply pressure to venous puncture site.
   a. If not already done, washes hands following sterile technique. May put on sterile gloves or may use sterile gauze dressing between fingers and puncture site.
   b. If patient is coherent, explains what performer will be doing.
   c. Performer may have stool put in place so that performer can stand on this to provide comfortable level from which to apply pressure.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 521

This is page 2 of 2 for this task.

List Elements Fully

2. For arterial puncture, performer notes position of physician's fingertips directly above and next to the puncture site on the side nearest the heart.

   a. Places fingers or fist directly over those of physician and notes the amount of pressure being exerted. Maintains pressure while physician withdraws his or her hands.
   b. While maintaining pressure, performer makes sure not to totally occlude the artery. Checks that performer feels one or two arterial pulsations every minute or as ordered distal to the puncture site.

3. For venous puncture performer applies light digital pressure directly over the puncture site for several minutes as ordered.

4. Performer maintains digital pressure for the time indicated.

   a. Before removing pressure completely at end of period, performer checks that bleeding has subsided. Reassures patient. Continues until bleeding is controlled.

      i) When bleeding has been controlled, performer touches clot gently using sterile technique to be sure that the clot is firmly fixed and hard.
      ii) Performer may check patient for evidence of swelling, accumulation of blood beneath skin, abnormal paleness or coldness of skin.
      iii) If there is any sign of hematoma, performer carefully circles with appropriate marker, records and/or reports so that it can be monitored.

List Elements Fully

      iv) If bleeding has not subsided after an unusual period of time, performer maintains pressure and has co-worker inform appropriate physician. Attempts not to alarm patient. Remains with patient until relieved.

   b. When appropriate, arranges to have pressure dressing applied or decides to do personally.

      i) May inform physician when bleeding stops.
      ii) Performer may reinforce instructions to patient to remain immobile. Suggests that if patient feels bleeding or warmth to call nurse at once. May show patient how to apply pressure personally until help arrives.

TASK DESCRIPTION SHEET

Task Code No. 522

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Pressure dressing applied to puncture site; pressure applied if bleeding; bleeding or problem reported.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Patient's chart; pen; sterile gloves, forceps, gauze, bandage, dressing; elastic bandage and clips; tape

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Any pt.; physician; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Applying pressure dressing to arterial or venous puncture site as ordered, by inspecting site for bleeding; applying pressure and reporting any bleeding or problem; applying gauze, pressure dressing and bandage; wrapping tightly; reporting and/or recording when completed.

List Elements Fully

Performer applies a pressure dressing to a puncture site as a result of:

a. Receiving orders,or request while present for special procedure.
b. Deciding to do after having applied digital pressure to puncture site.

Performer will already be dressed in appropriate garments in keeping with sterile requirements for procedure.

1. Performer notes orders for pressure dressing. Notes site of puncture, whether arterial. May reassure patient, explain what will be done.
2. If not already done, performer assembles materials or checks that materials are present on sterile procedure tray. Washes hands as appropriate.
3. Performer may don sterile gloves. Uses sterile procedure to apply pressure dressing:
    a. If not already done, performer checks that bleeding has been controlled at the puncture site:
        i) Inspects clot to be sure that it is firmly fixed and hard.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 522

This is page 2 of 2 for this task.

List Elements Fully

ii) For arterial puncture site, feels for arterial pulse distal to puncture site to be sure artery has not been occluded.
iii) If the bleeding has not been controlled or has started again, performer immediately applies manual pressure to the puncture site (directly above site on side nearest heart for arterial puncture and directly on site for venous puncture). Calls at once to co-worker to report bleeding as appropriate. Tries not to alarm patient and remains with patient until relieved or until bleeding is controlled.
iv) If there is problem of condition of wound, such as lack of arterial pulse, hematoma, swelling, performer reports at once to appropriate staff member.

b. Performer may apply sterile gauze pads to puncture site, a prepared dressing, or may roll sterile gauze into a pad, wrap with tape, and apply over gauze already placed over wound.

i) For arterial puncture, wraps tightly with gauze bandage and then with elastic bandage and clips. Depending on puncture site may secure by wrapping tape around body to hold in place (such as pelvis for femoral puncture).
ii) Checks that arterial pulsation is still evident distal to puncture site. Loosens bandage if appropriate so as not to totally occlude artery.
iii) For venous puncture wraps more lightly but makes sure firm pressure is being applied to wound.

List Elements Fully

4. May report to appropriate staff member when bandage is in place. May record on patient's chart.

TASK DESCRIPTION SHEET

Task Code No. 523

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

C.T.T. equipment turned on and warmed up; staff member informed of problem or decision made to notify service organization or test personally.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

C.T.T. units, control panels, switches; key for keyswitches; operator's manual, test and service documents

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker or supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing computerized transverse axial tomography (C.T.T.) equipment for use, by turning on main units, adjusting voltages; carrying out warm-up procedures; checking; adjusting if fault problem using operator's manual; notifying appropriate staff member or deciding to notify service organization if fault not overcome, or deciding to test personally.

List Elements Fully

Performer prepares computerized transverse axial tomography (C.T.T.) equipment for use at start of day, or after shut down of equipment, as a result of:

a. Regular assignment.
b. Request from co-worker.
c. Decision to do personally.

C.T.T. equipment may include E.M.I. or A.C.T.A. scanner, or similar type, depending on institution's facilities; may be referred to as C.T.T., C.T., or C.A.T. scanner.

1. Performer makes sure that the scanning area or room is clear or that anyone in room is appropriately shielded. Makes sure appropriate doors are closed and/or locked.

2. Goes to appropriate locations to turn on main power, check that power is on for control panels, and warm up equipment.

   a. Depending on the type of equipment involved, performer turns on main power switch for appropriate units, such as x-ray and motor generators, scanning unit, viewing units, control units, computer, teletype. May use key for keyswitch controls where appropriate.
   b. Checks that all lights or other indicators show that power is on for each unit.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 523

This is page 2 of 2 for this task.

List Elements Fully

Turns on individual sub-unit switches as necessary.

c. Where appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter.

d. If the C.T.T. scanner involved has a water filled head box for brain scanning, performer checks that water is clean, that head box is filled so that there is no air outside the back trap. Checks that upper and lower outside surfaces are free of dust, oil, talc or other foreign material. Checks that water heater is off and that water is not too hot for use.

e. If appropriate, operates controls to return scanning unit carriage and rotation assembly (gantry) to start position.

f. Checks that teletype or other data terminal controlling the computer is on line and powered up.

3. Performer may proceed with warm up procedure:

a. If warm-up procedure requires the switch-on of appropriate control, performer switches on "warm-up" control. May set mA range dial to appropriate maximum position. Checks that, after elapse of warm-up time, indicator light and/or teletype message indicates that equipment is ready for use.

b. If warm-up procedure for x-ray tube requires a step-wise procedure, performer sets the mA and then the kV controls to the initial settings for warm-up.

i) Makes sure external warning lights are on and/or illuminated safety sign is working.

ii) Waits appropriate time, and increases kV in steps after waiting appropriate amount of time between steps, depending on length of time machine has been turned off. Checks appropriate dials or manual for timing needed.

iii) Adjusts kV and mA controls until meters indicate that tube is warmed up to standard kV reading for warm-up stage according to schedule of steps and times and kV-mA settings appropriate to equipment.

iv) Checks that indicator light and/or teletype message indicates that equipment is ready for use. May reset computer if necessary.

4. If there is indication of overload or other fault condition, performer readjusts as indicated in operator's manual for equipment and continues as appropriate. If performer is not able to overcome problem, may decide to carry out tests, or notifies supervisor or appropriate staff person at once. If so authorized, may decide to notify outside service organization.

TASK DESCRIPTION SHEET

Task Code No. 524

This is page 1 of 6 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

C.T.T. scanning assembly, display tube surface, camera, disc and/or tape drive units inspected, cleaned; water, head cone, headbag inspected, cleaned, changed; water de-aerated; headbag repaired.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

C.T.T. scanning unit,display unit,camera,controls,disc and/or tape drive units;alcohol solution;lint free cleaning cloths;adhesive tape; water head box;head cone(s); headbag(s);water tank;control unit,control panels;water and air pipes;bottles of distilled or prepared water; disinfectant;drain trays,containers;screwdriver; knife;rings;screws;clips;marker;template;rubber cement;double-sided tape;soldering iron with cutting tip;scissors;petroleum jelly;operator's manual;phantom;rubber gloves;detergent;tap water; sign to prevent use of scanner

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker, supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Providing preventive maintenance for display tube surface,camera,disc and/or tape drive units, and/or scanning assembly(especially water-using head box assembly)of computerized transverse axial tomography (C.T.T.) equipment,by checking and cleaning display tube surface,disc and/or tape drive units,camera assembly;inspecting water,head cone,headbag;cleaning water tank; cleaning or changing head cone,headbag;changing water;refilling head box;de-aerating water;repairing headbag;setting equipment at start positions.

List Elements Fully

Performer provides preventive maintenance by periodically checking and cleaning computerized transverse axial tomography (C.T.T.) equipment such as display unit, camera assembly,disc and/or tape drives, scanning unit (especially equipment using a water medium) at start of the day, periodically, or after request to investigate problem or inspect, as a result of:

a. Regular assignment.
b. Request from co-worker.
c. Decision to do personally.

C.T.T. equipment may include E.M.I., A.C.T.A. scanner, or any other similar type, depending on institution; may be referred to as C.T.T., C.T., or C.A.T. scanner.

1. If responding to request, notes what is to be checked and/or cleaned. With water medium equipment, notes whether water and/or head cone and/or headbag is to be replaced in head box of scanning unit, or prepares to check condition of water and/or parts.

2. If performing check, performer may carry out any or all of the following:
   a. Makes sure that no unauthorized person is in control and/or scanning rooms. If anyone is present,performer indicates what he or she will be doing.
   b. Checks that x-ray unit is off. Clears scanning area.

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 524

This is page 2 of 6 for this task.

List Elements Fully

- c. Checks that power is on for scanning unit carriage (gantry).
- d. Makes sure that appropriate doors are closed and/or locked.
- e. Sets out supplies that will be needed.

3. If checking and cleaning display unit, performer uses a lint free cloth and lightly cleans the face of the cathode ray tube or TV monitor. Removes any alcohol residue.

4. If checking and cleaning camera assembly, uses appropriate alcohol solution and lint free cloth. Cleans camera lens, rollers, and inside and outside of camera cone assembly. Dries.

5. If checking and cleaning disc drive unit, uses appropriate alcohol solution and lint free cloth and cleans read/write heads. Removes alcohol residue.

   - a. Makes sure that oxide build up, fingerprints and any contamination are completely removed.
   - b. Checks, tightens,and/or replaces screws and other hardware in disc drive covers, base plate.
   - c. Cleans magnetic ring of spindle assembly. Uses adhesive tape to remove particles.
   - d. Dusts doors and surfaces.

6. If checking and cleaning tape unit and heads, removes tape from tape unit.

   - a. Removes head covers as appropriate.
   - b. Uses alcohol solution and lint free cloths. Cleans and dries head surfaces, face of tape cleaner, erase head, head guides, head guide blocks. Removes any alcohol residue with clean lint free cloth.
   - c. Cleans roller guides similarly, rotating to reach all surfaces.

List Elements Fully

   - d. Replaces head cover. Replaces tape in tape unit.

7. Moistens cloth and cleans all non-rubber surfaces of scanning unit carriage using alcohol solution; uses water on rubber parts.

   - a. Rotates moveable parts and cleans as appropriate.
   - b. Dries with lint free cloth.

8. If C.T.T. scanner uses a water medium and head box, performer prepares for inspection and cleaning.

   - a. Operates scanning unit carriage (gantry) using appropriate controls so that water pipe is at bottom and air vent valve is at top of carriage.
   - b. If appropriate, withdraws the patient examination table or couch to allow access to the head box.
   - c. Unless routinely replacing headbag, changing water, cleaning head cone, head box, and tank, or deaerating water, performer may check cleanliness of water:

     - i) Operates controls to empty and fill head box, passing water from head box to tank and back, and observes appearance of water through transparent water pipe and in transparent box.
     - ii) Notes whether water is foggy or has other signs of presence of algae or chemical deposits. Determines whether water should be changed.

9. If performer is to drain head box for any reason and/or drain water tank and clean the entire assembly, obtains distilled or sterile water in bottles, liquid detergent, or water bottles with appropriate additive.

TASK DESCRIPTION SHEET (continued)

Task Code No. 524

This is page 3 of 6 for this task.

List Elements Fully

Obtains cleaning equipment and cloths if not already done.

a. Maintains gantry so that water pipe is at bottom and air vent valve at top of carriage.
b. Puts drain tray in position to drain any residual water from head box.
c. Opens cabinet housing water tank and places container under drain tube to drain water from tank.
d. Opens air valve on head box and operates control to empty water from head box to tank. Allows remaining water in box to drain into tray. Empties tray when all water has drained from head box.
e. Removes headbag assembly and finger nuts and lays carefully aside.
f. Removes head cone which supports patient's head and lays carefully aside.
g. Allows water to drain from water tank by opening drainage tap so that water flows out into container.
h. Performer inspects the head cone and headbag assembly:

   i) May check headbag for signs of strain, wear, or leaks. Determines whether headbag can be reused or should be changed or repaired.
   ii) Determines whether head cone requires replacement (due to splits or other damage, or if another size or type is required).

i. Checks seal in opening of head box and cleans if appropriate.
j. May use weak soap or detergent, water and cloth to wash head box interior, rubber headbag, and head cone using rubber gloves. Wipes dry with lint free cloth. Lays headbag and head cone aside carefully.
k. Flushes and cleans water tank and cover.

List Elements Fully

10. If performer is to replace or repair headbag, removes from empty head box, as described above, if not already done.

   a. If headbag system incorporates a modified headbag with a preformed half round gasket, performer obtains such a fresh headbag and petroleum jelly.

      Smears front and back edges liberally with petroleum jelly. Fits headbag with special ring in head box and screws into place with screws provided.
   b. If headbag system requires forming, performer obtains marker, template, sharp knife or scissors, double sided adhesive tape, soldering iron with hollow cutting bit, screwdriver, and spring loaded clips (if not already done).

      i) Performer removes the two rings forming the rim of the headbag by unscrewing the retaining screws holding the two rings together.
      ii) Pulls old headbag away from the adhesive tape on the support ring. Cleans each half of assembly removing adhesive tape and any parts of old bag with alcohol solution if necessary. May set aside damaged headbag for later use in repairs.
      iii) Uses forming template and marks out its shape on the skirt of the new headbag. Checks that the major axis of the ellipse shape is vertical so that when the headbag is on the ring the pull tabs will be in the proper positions. Adjusts as needed.
      iv) Places double sided tape on the lower, inside face of the outer

TASK DESCRIPTION SHEET (continued)

Task Code No. 524

This is page 4 of 6 for this task.

List Elements Fully

ring. Makes sure to lay tape in an unwrinkled, non-overlapping layer, free of air bubbles. Removes backing, exposing second adhesive surface.

v) Stretches bag over outer ring using the clips to hold in place. Clamps so that rubber of bag is evenly stretched around circumference and so that elliptical line drawn on skirt is in line with the tip of the ring where the inner ring will be joined. Makes sure that clips do not cover screw holes or recessed area where inner ring will fit. Makes sure that tabs face appropriately.

vi) Presses skirt of headbag down so that it is in contact with the exposed adhesive surface of the tape.

vii) Heats soldering iron.

viii) Presses inner ring into its recess so that the marks at the top of the two rings line up exactly. Places clips at equal intervals to hold rings together, making sure not to cover up holes in the inner ring.

ix) Burns holes with soldering iron through the four, evenly spaced, front ring holes so that the rubber of the headbag and the adhesive tape allows access of the screws into the outer ring. Makes sure that the holes are large enough to allow the screws to turn in place.

x) Inserts screws into the holes burned and tightens. Makes sure that headbag does not twist under the ring.

xi) Burns in the remaining holes; inserts and tightens remaining screws.

xii) Removes all remaining clips; retightens screws.

List Elements Fully

xiii) Trims surplus edge of headbag in assembly with scissors or knife.

xiv) Disconnects soldering iron; allows to cool in safe place. Replaces equipment as appropriate.

c. If performer is to repair a headbag which has a small hole, removes headbag (if not already done) without disassembling. Obtains a formerly discarded headbag from which to obtain patch material.

i) Cleans and dries headbag as described.

ii) Locates hole and marks with marking pen on inside of headbag.

iii) Cuts a patch from the smooth part of the bag to be used for this purpose.

iv) When bag and patch are clean and dry, performer applies rubber cement to the inside of headbag within area marked and applies to one side of the patch.

v) When cement is dried to a tacky consistency, performer firmly presses patch over hole. Places heavy object over this and maintains the pressure about five minutes. Sets aside for twenty-four hours to dry where headbag will not be moved.

vi) If appropriate, so that scanner may be used at once while patched headbag dries, replaces patched headbag assembly with spare assembly previously prepared.

11. If performer is to replace head cone, performer selects appropriate type and size of replacement head cone.

a. Removes retaining screws of head bag assembly currently in head box

TASK DESCRIPTION SHEET (continued)

Task Code No. 524

This is page 5 of 6 for this task.

List Elements Fully **List Elements Fully**

and withdraws headbag ring and head cone (if not already done).

b. Checks that head cone is clean. Places appropriate section at bottom of head box with centimeter scale facing appropriate side. Checks that it is securely fitted.

12. Performer replaces headbag, head cone, and prepares to refill tank and/or box with water after inspection, cleaning, or replacement.

    a. If not already done, fits head cone in place so that it is flush with head box,and cm. scale is pointing appropriately.
    b. Checks that ring seal in head box is correctly positioned.
    c. Places headbag into appropriate position and fits it over fixing studs. Fits and tightens finger nuts.
    d. Checks that air vent valve is on top and open.
    e. Closes tank drain. Refills tank with appropriate distilled, demineralized water to appropriate level:

        i) May add liquid detergent to help prevent formation of air bubbles; may add disinfectant to prevent formation of algae.
        ii) Opens cap in tank cover and inverts bottles of prepared water, or siphons water; fills tank to appropriate level. Replaces tank cap.
        iii) Turns on water heater to remove dissolved air. Checks that water reaches predetermined temperature and turns off heater.
        iv) Waits until water cools to operating temperature before returning water to head box.
        v) Makes sure no scanning takes place while water is hot or heater is on. May place sign to so indicate.

13. Performer removes air bubbles from head box after refilling head box or replacing water in tank:

    a. If not already done, empties water from head box into tank as described above.
    b. If not already done, heats water as described above and allows to cool as described.
    c. Operates controls to fill head box from water in tank. Fills to preliminary two-thirds or full level and closes air valve.
    d. May pump water to and from tank to evenly mix water and additives.
    e. Swirls water around in head box and shakes headbag to collect the trapped air bubbles clinging to the cone and surfaces of the box.
    f. Rotates the gantry so that air valve is located at top of head box. Fills head box with water so that air is forced out past air valve. Closes air valve as water level passes valve.
    g. Pushes remaining air out through valve by pressing into headbag with hands. Pumps out air and refills.
    h. Rotates carriage assembly so that water inlet is on top, or rotates carriage slightly to a position in which small bubbles will collect in upper trap; waits and pumps these out.
    i. Rotates carriage to check whether bubbles collect on scanning surfaces. Continues to remove air bubbles until all are removed or until remaining bubbles only collect in traps,thus not affecting the picture.

14. Operates controls to return scanning carriage to start position.

TASK DESCRIPTION SHEET (continued)

Task Code No. 524

This is page 6 of 6 for this task.

List Elements Fully	List Elements Fully
a. Turns on any equipment turned off during cleaning and change of parts and/or water. Makes sure water heater is off. b. If responding to request, informs appropriate staff member when unit is ready for use. c. If appropriate, informs proper staff person of any supplies that should be replenished.	

TASK DESCRIPTION SHEET

Task Code No. 525

This is page 1 of 6 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

C.T.T. equipment test scans carried out to set or check calibration; output levels adjusted with detector sensitivity switches; accuracy of test scan data evaluated against test standards; malfunctions reported or adjustments arranged; test results recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

C.T.T. scanning unit, generators, control panels, computer; teletype; line printer; paper; program and test data magnetic discs, or tape cassettes or reels; examination table or couch; operator's manual; test and service documents; water filled and/or composite phantom; display units and controls; service record book or log sheet; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking calibration and accuracy of C.T.T. equipment by making test scans, by preparing and setting up for test scan(s) using water or appropriate phantom;checking system functioning;making scan with equipment in calibration position and entering calibration factors into memory,or observing signal level meters during scan and adjusting to read in proper range using detector sensitivity switches,so that water reads at predetermined density;checking accuracy of scan data against known standards;having adjustments made and/or reporting malfunctions;recording tests and results.

List Elements Fully

Performer checks the system performance, calibration and/or runs calibration of computerized transverse axial tomography (C.T.T.) equipment periodically, as a result of apparent malfunction, or when there is a change in machine's x-ray tube output and/or a change in the collimation being used, as a result of:

a. Request from co-worker.
b. Decision to do personally.
c. Regular assignment.

C.T.T. equipment may include E.M.I. or A.C.T.A. scanner, or similar type, depending on institution's facilities; may be referred to as C.T.T., C.T. or C.A.T. scanner.

1. Performer determines what type of test is appropriate, depending on reported malfunction, or problem found personally, or makes tests or adjustments that are due to be carried out on a regular, periodic basis, based on the type of C.T.T. equipment involved:

   a. Performer may plan to chec automatic calibration and/ or have computer calibrate factors so that a standard reference medium (water) will read out at a predetermined density level (such as 0 to 200) and all other substances will be scaled to that reference. Depending on equipment, plans to enter new calibra-

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 525

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List Elements Fully

List Elements Fully

tion factors into computer memory, and/or plans a test run to check accuracy of calibration and/or readout.

- i) May plan to adjust photomultiplier detector output voltage and viewing controls for correct scanning and interpretation.
- ii) Depending on equipment, may plan to check new disc cartridges to ensure a perfect system program or test program disc.

b. Performer may plan to do test runs to calculate and check the variation in density of processed scan pictures, and/or the functioning of other components in the system.

2. Performer goes to the room in which the C.T.T. equipment is housed. Washes hands. Makes sure that no unauthorized personnel are in scanning area or control room, and that anyone present is appropriately shielded. Makes sure appropriate doors are closed and/or locked. Prepares for test(s).

   a. Makes sure that the C.T.T. equipment is warmed up and ready for use, that controls are unlocked and set as appropriate:

      - i) If calibration is to be done and there is a calibration switch, sets to calibration position. Otherwise makes sure switch is not set to calibrate.
      - ii) May check that ready light is on, or switches on standby control and makes sure that standby light comes on.
      - iii) Checks that x-ray voltage generator is on and running at nominal output, that viewer and computer are on and ready.
      - iv) If appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter.

   b. Makes sure that teletype unit or other data terminal controlling the computer is on line, that power is on, and that it has adequate paper supply.
   If there is separate line printer, may check paper supply; sets controls to provide print-out as soon as test scan is completed.

   c. Depending on the type of test run, performer may obtain a test object such as water enclosed in a skull specimen or model, and/or a standard composite phantom containing known materials.

   d. If the C.T.T. scanner involved has a water filled head box for brain scanning, and if water scan is to be run, performer uses appropriate controls to empty water from head box; may remove head cone; completely fills water box with water.

      - i) Makes sure headbag is out of the line of the x-ray beam.
      - ii) Checks that head box is filled with enough water so that there is no air in the x-ray beam path. Checks that water heater is off and that water is at appropriate operating temperature.

   e. Checks that scanning area is clear and that unit is in start position. If appropriate, operates controls to return scanning unit carriage and rotation assembly (gantry) to start position. Makes sure that examination table or couch is properly attached to scanning unit.

TASK DESCRIPTION SHEET (continued)

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List Elements Fully

List Elements Fully

3. If the system or test programs are permanently on each data disc or test program disc, performer loads the system programs by loading a system disc into the disc drive unit; loads a test program similarly as appropriate:

   a. Places disc into disc drive unit. Checks that unit is set to run, and that other switches are in proper position. Checks that ready light is on, and that computer is set to receive input data.
   b. If checking new system program data disc or test program disc, performer checks that disc is properly seated in case. Loads.

      i) Notes whether disc wobbles as disc comes up to speed. Notes any problem noises.
      ii) If a problem is apparent, switches from drive to load; removes disc. May write description of problem. Arranges to have disc returned.
      iii) Sets selector to scanning position if disc is all right.
      iv) Checks that teletype message indicates that equipment is ready to receive input data, such as "Program Number?"

4. If the system programs are on a cassette tape and scan data are recorded on a separate tape, performer loads tapes, enters program into memory, and initializes tapes:

   a. Performer inserts program cassette or tape in proper place in tape drive unit. May rewind tape as appropriate.
   b. If appropriate, erases (initializes) the computer memory. Enters appropriate code on teletype; sets switches as appropriate and sets to enter, load and run. Checks that appropriate light comes on.
   c. If appropriate, sets controls to load system loader and/or program(s). Checks or sets appropriate switches. Checks that cassette or tape is wound and ready. Sets for run and load.
   d. Performer has program read in by setting appropriate switches and activating. Notes appropriate operating signals.
   e. When the program has been read in as indicated by light or teletype message, performer may check that the contents of the display registers show as appropriate.
   f. May rewind program tape or cassette using proper controls. Removes and stores tape or cassette.
   g. May mount test data tape. Places empty tape reel and test tape into appropriate positions on unit. Threads as appropriate so that tape will be wound on take-up reel. Sets appropriate switch such as load switch.
   h. Checks that computer is ready by activating as appropriate, such as using start or standby switch. Checks that teletype message asks for input data such as "Scan Code?" and sounds beep, or "Program Number?"
   i. If option is available, may set switch so that magnetic tape record is or is not automatically made, depending on institutional procedures for calibration or test run.

5. If the teletype does not print appropriate message, performer may check teletype, computer settings and switches as appropriate; may reset program by setting switches to settings which initiate a self examina-

TASK DESCRIPTION SHEET (continued)

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This is page 4 of 6 for this task.

List Elements Fully

tion check, and then reset and restart, following appropriate steps for switches and controls.

6. If performer is to check the accuracy of automatic calibration using a water scan for a water-using scanner, check the accuracy of readout data using a composite phantom, or is to have computer calibrate density factors using water-filled phantom, performer may proceed as follows:

   a. If not already done, sets controls to scan position. If not already done, uses teletype to answer data requests such as "Program Number?" or "Scan Code?" Answers with appropriate code to call scanning program or subroutine.
   b. Performer enters codes in response to teletype requests or operates controls to set up for standard water or phantom test scan:

      i) May enter codes for test run's number of degrees between successive scan passes, whether long or short run, if options.
      ii) Enters test identification information as appropriate.
      iii) May enter distance in cm's from a reference plane to level of scan; may set controls or type in standard test scan angle.

   c. Sets milliamperage and kilovoltage as appropriate for test scan.
   d. For a water scan, performer uses water filled head box. For check of readout accuracy, or to run scan to perform calibration, performer positions composite phantom or water-filled phantom for the test scan as appropriate to the equipment:

List Elements Fully

      i) Performer places appropriate phantom into position in center of scanning ring in head holder. Secures into position. Uses manual or motor controls to adjust table or couch height to standard position.
      ii) If unit includes a water filled head box, performer operates controls to empty sufficient water from box to allow placement of phantom within headbag held in place by head cone inside box. Adjusts so that phantom is inserted to proper depth. Operates controls so that water enters box, allowing headbag to collapse onto phantom and closely fit skull shaped contours.

7. Performer operates scanner controls from shielded control area:

   a. Makes sure that everyone is out of scanning room or appropriately shielded. Makes sure that outside doors are closed and/or locked. Checks that external warning lights and/or illuminated safety sign is on.
   b. Checks that all controls and interlocks are properly set for scanning, and that high voltage is on and running at nominal level.
   c. Initiates scan by pressing appropriate control button.
   d. If the equipment will be adjusted through use of detector sensitivity rotary switches, performer watches the relevant meters showing the signal levels from the integrators for the photomultipliers:

      i) Notes whether each needle peaks to a predetermined area on meter. If an adjustment is needed,plans the readjustment with

TASK DESCRIPTION SHEET (continued)

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List Elements Fully

rotary switches that will be necessary.

ii) If there is need for adjustment, performer may operate controls to abort scan. Then adjusts rotary switches as described below, and repeats scan procedure until meter(s) read in proper areas.

iii) May decide to allow scan to run to completion and to check scan print-out to determine the readjustment needed.

iv) At end of scan, if the line printer can print out the relative scan densities, and if controls have been set for this, performer tears off print-out of density values. Notes figures for picture points within the water filled head box or water filled phantom and checks if they read at the appropriate value (such as zero or 200), depending on equipment.

vi) If not as required, performer judges what adjustment must be made with use of rotary switches. Resets rotary switches and repeats scan procedure until meters read in proper area and line print-out gives the appropriate density value for water.

e. If calibration adjustment will be made by entering calibration factors permanently into computer memory until changed, initiates this by typing the appropriate code on the teletype after scanning.

f. Performer sets controls to view the scan on a black-grey-white TV monitor or cathode ray tube.

i) If not already done, turns on viewing unit or types appropriate code on teletype.

List Elements Fully

ii) To have computer calculate calibration factors, performer types in code for subroutine to select one (and then the other) of the two pictures on the display. Uses switch as appropriate to move from one picture to the other. When both calculations have been made, performer sets calibration switch to regular scan position so that factors will be retained in memory, and returns to regular operation.

g. If the viewing controls are to be used to check that water appears properly on the visual display according to a preselected value (such as zero), performer may proceed as follows:

i) Sets control for the mid-point of the range of the display (the window level) to the desired value for water (such as zero).

ii) Sets scale of window level to normal position.

iii) Sets control for the black-to-white range (window width) to measuring position.

iv) Looks at the area of the picture that surrounds the water. Checks that one unit on the negative side of water value (zero) changes this area to peak white, and one unit on the positive side changes this area to black.

h. If performer will check calibration by obtaining a print-out of the relative density values of the picture points, and if not already done, performer may type appropriate code for printing out, and sets controls as appropriate.

TASK DESCRIPTION SHEET (continued)

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List Elements Fully

  - i) May use controls to specify which picture, which row(s), and which column(s) are to be printed out.
  - ii) When print-out is obtained, performer checks that scan points give the preselected value for water (such as 200).
  - iii) If not obtained, and if the calibration factors have already been entered, performer may report this to appropriate staff member or go on to run a check of equipment.

i. To check accuracy of scan readouts, performer may run scans as described at several discrete levels. For each scan performer operates viewing controls to inspect scan picture:

  - i) Sets window width and level as appropriate for the test scan cm. level run and being viewed, following the standards set by manufacturer.
  - ii) Checks that there is no streaking, that shapes are correct for the level being observed.
  - iii) Checks overall similarity of scans and notes signs of misalignment of unit parts such as head box.
  - iv) Makes sure that appropriate number of individual steps in the white-gray-black scale can be discerned. May adjust black and white level controls.
  - v) Checks that picture is in center of display surface (cathode ray tube or TV monitor).

j. If performer is to check the accuracy of the overall system using the test scan, performer identifies the test run as appropriate so that it can be retrieved later. Loads the test program as appropriate, and then loads or retrieves the scan data.

  - i) Selects specified picture areas or the complete processed picture for which means and standard deviations of density values are to be calculated.
  - ii) Uses appropriate responses to teletype to have computer calculate means, standard deviations, and/or produce a histogram.
  - iii) Performer compares the calculated means and standard deviations with the manufacturer's listed limits. Notes whether results fall within normal limits.
  - iv) If not, may judge possible source of problem.
  - v) If possible cause of problem can be dealt with by the performer, such as cleaning dirty equipment or water, eliminating air bubbles, changing collimation, performer may arrange to have preventive maintenance or adjustment done or decides to do personally.

k. Performer reports any problems that must be dealt with by other staff or service organization, or arranges to call service organization.

l. If a new disc is being tested and any failures have been encountered, performer arranges to have disc returned as described earlier.

8. When test runs and adjustments have been carried out, may record what was done, date, and results in a record book or log sheet. May sign. Places record in appropriate location for filing if appropriate.

TASK DESCRIPTION SHEET

Task Code No. 527

This is page 1 of 7 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Requisition reviewed; C.T.T. equipment set up for viewing and recording of scans; scans located on disc or tape, viewed as display; controls adjusted; scan displays photographed: scans printed out; scans recorded on magnetic tape; scans presented for review by radiologist; scan records placed for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Requisition sheet or orders; C.T.T. display and viewing unit(s), control panels, computer; teletype, line printer, paper; camera, film; program and data discs and/or magnetic tape reels, cassettes; operator's manual; absorption coefficient charts; log book; jacketed materials; marking pen; scissors; pen; write enable ring; protective case

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologist or other physician

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Retrieving, displaying and making photographs, print-outs and/or magnetic tape records of computerized transverse axial tomographic (C.T.T.) scans, by reviewing requests; preparing equipment; locating scans on disc or tape; viewing scans on display and adjusting as requested by radiologist or as ordered; making photographs of scan displays; making line print-outs of scans; recording scans on magnetic tape, as ordered; presenting for review; discussing, continuing as ordered; placing scan records for use.

List Elements Fully

Performer retrieves, views and records computerized transverse axial tomography (C.T.T.) scans after they have been stored on magnetic disc or tape as a result of:

a. Request of radiologist or other physician as a part of reading and interpreting function of the physician.
b. Written or oral requisition that record(s) be made, duplicated, or otherwise retrieved.

C.T.T. scans may be produced and viewed with equipment such as E.M.I., A.C.T.A., or similar scan equipment, depending on facilities at institution. Scans may be referred to as C.T.T., C.T. or C.A.T. scans.

1. Performer determines the particular scan(s) to be viewed and/or recorded as listed by patient's name and identification number, the scan(s) record or file number(s), the disc or tape name or number on which scan(s) appear, or the date(s) on which the scan(s) were made.
   a. May note location of scans on disc or tape as written on order form
   b. May look up location of scans on disc or tape in log book, in patient's chart, on tape or disc label.
   c. May plan to print tape or disc directories in order

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

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to search for the scans required; may decide to use visual search options on a tape or disc. May use computer to perform search.

d. Depending on the information available, performer obtains the appropriate disc(s) or tape(s) from storage, if not already loaded on disc or tape drive unit, or obtains the discs or tapes that may contain the scans involved.

2. Performer reviews what is required by reading the requisition and/or discussing with the physician involved.

   a. May note the type of records to be made, such as line print-out, photographs of visual display, recording of disc data on magnetic tape. Notes any orders on use of viewing options. Notes whether more than one copy of each print-out or photograph is requested.
   b. If performer is to retrieve scan images for viewing by physician, determines preferences for viewing options.
   c. If referring physician has requested that prior films, ultrasonograms, prior scans, and test results already on file be sent with the C.T.T. scan records ordered, and if not already with patient's jacketed material, performer arranges to have these delivered.
   d. If performer determines that the request is not properly authorized, is incomplete, that sufficient information is lacking for performer to proceed properly, notifies supervisor, radiologist, or other designated staff person, depending on institutional procedures. Explains the problem if appropriate, and proceeds after obtaining needed information, signature, or orders.

List Elements Fully

3. When performer is clear about what is required, prepares for viewing and recording as appropriate to equipment:

   a. Performer makes sure that the C.T.T. power supply, computer, disc or tape drive, teletype and viewing units are turned on, warmed up, and ready for use. Checks that controls are unlocked.

      i) Makes sure that teletype (and line printer if separate) are set to operate and are on line position.
      ii) If appropriate, sets controls to viewing position.

   b. If not already done, checks paper supply in teletype and line printer if separate. May check whether printing is faint, whether carbon ribbon needs changing. If appropriate, obtains additional paper and/or carbon ribbon. Loads as appropriate to equipment; advances paper or ribbon and checks that unit is operative.
   c. If the system programs are permanently on each data disc, performer loads the system programs by loading the proper magnetic disc to be examined into the disc drive unit. If the scan data are on magnetic tape but programs are on disc, performer loads an appropriate disc into disc drive unit:

      i) Places disc into disc drive unit. Checks that unit is set to run and that other switches are in proper position. Checks that ready light is on, and that computer is set to receive input data.
      ii) Sets selector to viewing rather than scanning position.

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iii) Checks that teletype message indicates that equipment is ready to receive input data, such as "Program Number?"

d. If the scan data to be examined are on magnetic tape, performer obtains appropriate tape and loads into tape unit:

i) Places empty tape reel and tape to be examined into appropriate positions on unit. Threads as appropriate so that tape will be wound on takeup reel. Sets appropriate switch such as load switch.
ii) May use teletype to enter code that will wind tape into initial position.
iii) Checks that teletype message indicates that computer is ready for input data such as "Scan Code?" or "Tape Code?" and beep sound. If appropriate, types in code to set computer to viewing mode.

e. If, in preparing for viewing procedure, the teletype does not indicate that the computer is ready to receive input data with message such as "Program Number?" or "Scan Code?" or "Tape Code?" and beep sound, performer may reset or reload the program(s) in the computer's memory as appropriate to equipment. May do any or all of following:

i) If the teletype does not print appropriate message, performer may check teletype, computer settings and switches as appropriate; may reset program by setting switches to settings which initiate a self examination check, and then reset and restart, following appropriate steps for switches and controls. May try a new disc.
ii) If the program must be reloaded using system programs on separate cassette or tape reel, performer inserts program cassette or tape reel in proper place in tape drive unit. May rewind tape as appropriate.
iii) If appropriate, performer may erase irrelevant information from computer's memory (initialize) to prepare for loading of system programs. Enters appropriate code on teletype; sets switches as appropriate, and sets to enter, run and load. Checks that appropriate light comes on.
iv) If appropriate, sets controls to load system loader and/or program(s). Checks or sets appropriate switches. Checks that cassette is rewound and ready. Sets for load and run.
v) Performer has program read in by setting appropriate switches and activating. Checks for appropriate operating signals. When the program has been read in as indicated by light or teletype message, performer may check that contents of display registers are appropriate.
vi) If appropriate, rewinds program tape or cassette using proper controls. Removes and stores tape or cassette.
vii) Checks that computer is ready by activating as appropriate. Checks that teletype message asks for input data such as "Program Number " "Scan Code?" or "Tape Code?" and beep sound. If appropriate, types in code to set computer to viewing mode.

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viii) If there is still problem, arranges to have equipment checked out as appropriate or decides to do personally.

f. If not already done, performer checks whether camera unit is loaded with adequate film supply. May check film supply indicator, or opens back of camera and inspects.

i) If camera uses Polaroid film cassette containing film for eight exposures, notes number of unexposed films remaining and provides additional package (s) from storage area. Reloads when appropriate.

ii) If loading Polaroid film package, performer opens camera and package containing film. Handles carefully and removes film pack from bag. Discards any moisture absorbing paper and inserts film pack in camera as appropriate in relation to light shield and restraining spring. Checks position of tabs. Closes camera. Checks and removes safety cover by pulling out tab. Rechecks and readjusts if needed.

iii) If camera uses roll film and there is insufficient supply in camera, performer arranges to have roll film cassette loaded, or decides to do personally.
When loaded roll film cassette is obtained, checks loading in subdued light. May check that end of film is cut correctly and is properly threaded and attached to takeup spool so that film unwinds appropriately. Checks that film is properly engaged in sprockets. Locks into operating position. If appropriate, cuts off excess film at exit port and removes. Attaches film cassette to camera and locks into place. Replaces camera cover.
If there is an adequate film supply, checks that film is properly loaded. Advances film to compensate for any exposure of film due to installation or check. Removes dark slide from camera lens if appropriate.

g. If performer must search for scan file or record number(s) in order to view, may print out tape or disc directories to list the record labels on a given tape or disc:

i) May type out the code(s) to call the appropriate program or subroutines to list the record labels on the tape or disc so that the record (scan) numbers may be located.

ii) Performer may request and receive information listing all the tape files with the same patient's code.

iii) Performer may use subroutine code numbers or search selector to move the records on the tape or disc into display on TV monitor or cathode ray tube and provide a visual search for the scans being sought. Performer reads the record labels being displayed.

iv) Performer notes the tape, disc and/or record number(s) that will be required so that the scan(s) of interest may be viewed.

h. Once performer knows which disc(s) or tape(s) to read, mounts as ap-

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propriate if not already done, as described.

i. Once performer knows which file, or record (scan) number(s) to read from the mounted disc or tape, performer enters code to call the first scan to be viewed, or uses selector to move the scan of interest to the display.

j. If physician will determine how display and/or what records will be made, performer notifies physician that scan(s) is (are) ready for viewing. May provide absorption coefficient charts.

4. Performer adjusts the visual display according to orders on requisition, standard orders, or request of physician:

   a. If viewing the scan in a white-gray-black scale on TV monitor or cathode ray tube, uses controls on viewing unit or calls appropriate subroutines by typing code numbers on teletype to adjust display as requested or decided:

      i) Checks that identification information showing on display is correct.

      ii) Performer may note the appropriate density levels for the material under examination and the information required, or checks the settings appropriate for display so that the picture to be viewed provides even steps of intensity change along a gray scale from black to white.

      iii) Sets the window (display) width as appropriate to the type of density range needed, i.e., such that all values above the range will be undifferentiated at one extreme, such as white, and all values below the range will be

List Elements Fully

undifferentiated at the other extreme, such as black.

      iv) Sets the window level (mean) to correspond to the median density value desired for the median or center gray-tone within the range.

      v) Performer adjusts the window mean (level) and/or window width by using appropriate manual controls or subroutines until the picture displayed demonstrates the sharpest density gradation for the tissues in the area of interest and the possible pathological material involved, or follows radiologist's or clinician's orders.

      vi) Depending on options available, performer may note or set controls to read the density value at any point in the picture, at request of radiologist or when evaluating picture personally. May use controls to blacken all picture elements (points) at a given display level, have them flicker, outline them. May use controls as appropriate to magnify an area or otherwise modify the display of the two contiguous "slices."

   b. If viewing the scan as a color display, performer may call a preselected color scheme or spectrum, with each color corresponding to a display level, by calling subroutine with teletype; may create new color representation as appropriate by defining intensity factors for the base colors of the TV color monitor.

      i) Depending on equipment, performer uses options to vary color display as described, such as flicker, magnification, making

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all picture points of a given display level turn a particular color.

ii) Follows orders or requests to adjust window width and level in terms of color contrasts rather than black-gray-white contrasts, with colors representing given density levels as selected.

5. Performer may photograph a given display as requested by physician, or adjusts each display and makes photographs according to orders on requisition:

   a. When a black-gray-white display is obtained of which a permanent photographic record is desired, performer may proceed as follows:

      i) Checks that roll film, Polaroid, or other camera is loaded if not already done.
      ii) Sets any appropriate control to "photograph" setting.
      iii) May set shutter and aperture as appropriate.
      iv) If appropriate, swings camera into position and checks that appropriate light is on.
      v) Operates camera exposure control.
      vi) If Polaroid or other automatic processing camera is used, waits for exposure to be completed, pulls out tabs as appropriate, and waits for film processing to take place. Peels off or separates developed print from negative without letting print come in contact with negative. Discards tabs and negative as appropriate, avoiding any contact with caustic jelly. May fold and wrap negative to discard.

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      vii) Continues with additional photographs as described.
      viii) If roll film is used, when all photographs have been taken, performer may remove as appropriate and place for processing, or decides to do personally.
      ix) When each processed photograph is ready, checks that photo has the same appearance as the display being viewed. If not, reports to proper staff member.
      x) If the film used requires a coat of fixer, may accumulate the developed photographs and have them coated with fixer, or decides to do personally.
      xi) If, during the course of procedure, camera needs reloading, performer reloads Polaroid pack or roll film as described.
      xii) If identification information photographed with display is not sufficient, performer may use marking pen to write in additional information such as window width and level (mean) or other option selected.

   b. If a color camera is available, performer may make color photographs of display following similar steps to those for black-gray-white photographs.

6. Performer may make a line print-out of a given scan (giving the relative density or absorption coefficients of the picture points) when requested by physician or according to requisition.

   a. May make print-out without recourse to visual display by typing the appropriate codes to call the scan and to call subroutine or program to make print-out.

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b. If appropriate, performer views the display and may use controls to specify which of the pair of scans and which of the rows and columns of the display are to be printed.
c. Performer tears off printed output as appropriate and sets aside for review by physician or placement with other records ordered.

7. If scan data are on magnetic disc and performer is to transfer the scan data from disc to magnetic tape, performer may proceed as follows:

   a. If not already done, performer checks that magnetic tape unit is loaded as appropriate, as described earlier. May fit a "write enable" ring to the tape reel.
   b. May refer to log book and enter or check tape directory (identification data) and code numbers. May set appropriate controls to enter tape label information.
   c. Enters appropriate code to transfer the scan data from the disc to permanent record on magnetic tape.
   d. May defer transfer to tape until all the scans for a patient have been reviewed.
   e. May operate controls to obtain print-out giving record labels or tape directory information showing tape contents. May attach to tape reel; may write in other identifying information.

8. When the performer has displayed and made any permanent records ordered for first scan, continues with any other scans as ordered.

   a. Performer operates controls as appropriate to resume viewing.
   b. Repeats display, adjustment of display options, photography,

List Elements Fully

printing and taping from disc as ordered or requested.
   c. May discuss the display options at any time. May make multiple copies of photographs and print-outs if so ordered.

9. Depending on orders, performer terminates procedure as appropriate:

   a. If ordered, performer brings C.T.T. scan photographs, computer print-outs and, possibly, absorption coefficient charts to physician for review. Repeats or continues with viewing and recording procedures if so ordered.
   b. May decide to personally jacket scan photographs, line print-outs, requisition sheets, and related materials, and/or record information in log book, or arranges to have this done, depending on institutional procedures. Continues as ordered.
   c. When procedure is completed, performer may unload disc and store.
   d. May reset and rewind magnetic tape using appropriate controls:

      i) When tape drive has stopped, completes rewind operation.
      ii) Removes tape reel from unit. Closes unit door.
      iii) May place in protective case.
      iv) Returns tape to file storage, or places for return in appropriate location.

   e. When completed, performer may indicate to appropriate staff person when the performer is ready to proceed with next task.

TASK DESCRIPTION SHEET

Task Code No. 528

This is page 1 of 4 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Calibration and/or dose monitoring program, procedures, report forms, technique charts, dosage charts designed; calibration, dose monitoring equipment selected, procedures decided on; program presented and/or spot checked; program evaluated.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Literature on radiography equipment, calibration procedures, dose monitoring devices; pen, paper, dictation equipment; existing technique, dosage charts; current calibration, dose monitoring records

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologists; radiologic technologists; co-worker; service personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Designing, maintaining, evaluating calibration and/or dose monitoring program in diagnostic radiology, by considering equipment, examinations, accessories, types of monitoring measures, types of calibration tests, information needed, equipment alternatives; designing report forms, dosage charts, technique adjustment charts; selecting test and/or monitoring procedures; presenting program; spot checking, evaluating current program.

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Performer designs, maintains, and/or reevaluates a quality control calibration and/or dose monitoring program for diagnostic radiography equipment (to achieve equal radiographic results for equal technique settings and conditions throughout the department and/or to minimize unnecessary patient exposure) as a result of:

a. Regular assignment.
b. Request from supervisor or co-worker.
c. Own initiative.

1. Performer may decide or be requested to develop or evaluate a program to help bring about a reduction in the need for repeat examinations, to make it possible for radiologists and technologists to consider the patient exposure and/or record estimated patient exposure associated with given standard examinations, and/or to detect fluctuations in the efficiency, quality and output of the x-ray beams used in examinations.

2. Performer considers the types of equipment to be dealt with and the types of examinations involved. May discuss with radiologists, radiologic technologists. May consider any or all of the following:

   a. Considers type of equipment, such as overhead radiography equipment, flu-

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TASK DESCRIPTION SHEET (continued)

Task Code No. 528

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oroscopy, cineradiography, spot filming, tomography, computerized transverse axial tomography.

i) Considers the accessories used for given examinations such as image intensifiers, automatic brightness controls, use of grid, use of bucky, use of image intensifying screens, the size, type, and speed of x-ray film used.
ii) Considers the type of generator(s) involved, with respect to phase and rectification.
iii) Considers the inherent filtration and the focal spot sizes available.

b. Considers the standard examinations and the related standard requirements, including technical factors.

i) Considers use of added filtration, extension cones, collimated field size, usual patient positions and projections, target-to-film distance or target-to-image distance (TFD or TID). May consider target-to-skin distance (TSD).
ii) Considers the standard technical factors used covering kVp, mA and exposure time for given patient thicknesses, field sizes and TFD.

3. Performer considers the accuracy checks that may be required including any or all of the following:

a. The accuracy of the kVp selector settings. May consider use of effective kilovoltage constant potential (kVcp) to account for the penetration quality of the x-ray beam through a given absorption level such as patient equivalent phantom or beam attenuator.
b. The accuracy of the milliamperage selector settings.
c. The accuracy of the light field-x-ray beam alignments.
d. The accuracy of the exposure timer(s), whether conventional or automatic. With automatic brightness control systems, considers whether mA is fixed or variable, whether kVp is fixed, stepped, variable.

4. Performer considers the type(s) of exposure monitoring to select for the program, such as use of measurements for selected points of exposure such as gonads, center of field, or whole body exposures, exposure area products. May consider calculation of average exposure rates. Considers whether to use simultaneous dosimetry with transmission ionization chamber, or simulated dosimetry with a phantom, and/or other monitoring devices.

5. Performer considers the type of accuracy checks to be made, such as type of tests to use for technical factors, the standard conditions to set up for tests and exposure monitoring, the type of test instruments to use.

a. Considers the limitations of available test equipment and diagnostic equipment with respect to energy dependence, intensity range and margins of error under test conditions.
b. Considers calibration of test or monitoring equipment.
c. Considers acceptable range criteria within which test results will be allowed to vary. May refer to predetermined or legislated standards.

TASK DESCRIPTION SHEET (continued)

Task Code No. 528

This is page 3 of 4 for this task.

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d. Considers manufacturers' recommendations or specifications, the time, staff and funds available for the program.

e. May consider the appropriate staff level or positions from which personnel should be selected to carry out monitoring and/or testing and record keeping.

f. Performer may select the type of records to be kept and design the report forms.

6. If there is an ongoing calibration and/or monitoring program, may evaluate it in the light of existing records, recent technological developments, new legislation, or scientific evidence on need for revised safety standards. As appropriate, reviews the elements of the program as described above.

7. Performer may design exposure and/or technique charts to be posted for each diagnostic unit:

   a. May design charts showing exposure rates for specific examinations for given technical factors based on monitoring results and/or calculations.

      i) May suggest or indicate how patient exposure can be estimated and recorded for a given examination and/or cumulative exposure recorded.
      ii) May suggest how results can be used to reduce patient exposure.

   b. Performer may design technique charts.

      i) May design charts so that calibration program can be used to post technical factors such that equal radiographic results can be obtained for a given standard examination throughout department.
      ii) May determine how posted technical factors for each unit can be modified by calculations of compensatory changes to reflect deteriorating output, small errors in settings, and/or changes in policy on exposure to maintain equal radiographic results.

8. Depending on whether it is requested or appropriate, performer may prepare, write out, or dictate a report presenting the calibration and/or monitoring program.

   a. May refer to the cost of the program in relation to available alternatives, and benefits in terms of decreased exposure, and/or increased efficiency. May refer to existing literature.
   b. Performer presents and/or discusses proposed program as appropriate in response to assignment, or request, or on own initiative.
   c. Performer may prepare and bring in alternative proposals as requested, answer questions on program as appropriate.

9. At any point during a current program or after the program is approved, performer may participate in developing, running and maintaining the program.

   a. May arrange to have approved test or monitoring equipment purchased, calibrated and/or installed.
   b. May arrange to make preliminary tests and report results.
   c. May decide on or suggest the procedures for carrying out the cali-

TASK DESCRIPTION SHEET (continued)

Task Code No. 528

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bration and monitoring tests given the equipment involved and the records to be kept. d. May write out and/or discuss the procedures. e. May arrange to teach calibration and/or monitoring procedures. f. May arrange to have maintenance staff and/or outside service personnel available to make needed adjustments as a result of calibration tests. g. During the course of the program, performer may arrange to spot check how procedures are being carried out, whether they are being done accurately, whether records are being kept appropriately.	

TASK DESCRIPTION SHEET

Task Code No. 529

This is page 1 of 6 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Equipment checked for appropriate field limitation, defining, localizing features;field indication and alignment,minimum TOD,positive beam limitation,visual light system radiographically checked for accuracy,alignment;measures calculated and compared with given acceptable limits;decision made to refuse equipment,repair;test results recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Legislated and/or institutional requirements for diagnostic x-ray equipment;manufacturers' specifications;cassettes;radiopaque markers;tape;diagnostic x-ray unit(s) and controls;collimators;test descriptions,test forms;pen,pencil;technique,tube rating charts;out-of-order sign;telephone;TFD indicator;ruler;view boxes;tape measure;marking pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor;radiologist;repair service personnel or installers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking x-ray field limitation,x-ray receptor and light field alignment,minimum TOD, TFD and field size indicators for diagnostic x-ray equipment by inspecting for appropriate features;setting up radiographic tests;making exposures;calculating dimensions,differences from required dimensions,and whether differences are within acceptable ranges;arranging for replacement or repair;recording test results.

List Elements Fully

Performer checks that diagnostic radiographic equipment has acceptable x-ray field limitation and visual definition of the x-ray field, aligned and centered within acceptable limits,when informed that new equipment is to be checked or when periodically checking existing equipment as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer determines the equipment to be checked and the field limitation tests to be carried out.
   a. Obtains standard test procedures, government standards, test forms and records, the appropriate manufacturer's specifications, and test materials.
   b. Performer obtains the various test cassettes with appropriate sizes, type, and speed of film and screen combinations and radiopaque markers for identifying test films and carrying out the tests.
   c. Reviews appropriate technical factors for the various tests. Checks manufacturer's tube rating chart to be sure that the test stations will not exceed the instantaneous ratings or the total anode heat capacity for the tube.
   d. Enters control room for designated machine. Checks

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 529

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to see that indicator light shows that x-ray machine is ready for use. Makes sure that it is warmed up and that all circuits have been stabilized.
Checks line voltage meter and, if required, turns compensator dial until needle is aligned properly on line meter.
 e. Performer considers the tests to be done and, if appropriate, plans to combine test set-ups for more than one test exposure at a time.
 f. Maintains beam axis in perpendicular position for all tests.

2. If the equipment is new, performer may make note of the following:

   a. Checks for "warning" labels on control panel and outside examination room.
   b. Checks that there is a device to indicate the target (focal spot or source)-to-film (image receptor) distance (TFD, FFD, or SID).
   c. Checks that there is a device to indicate when the axis of the central beam is perpendicular to the image receptor. May check angulation.
   d. Checks that there is an appropriate beam limiting device that indicates the field size that will be projected at given TFD's.
   e. Checks that there is a light system that visually defines the perimeter of the x-ray field and its center.
   f. Checks that exposure switch cannot be operated outside of shielded area.

3. If performer will check that the smallest available variable field size is no greater than acceptable standards, performer reviews requirements and may proceed as follows:

List Elements Fully

   a. Prepares test cassette with appropriate information.
   b. Places in center of horizontally placed examination table.
   c. Adjusts TFD to standard test height with central ray perpendicular.
   d. Centers central ray to center of cassette by using light field indicator and cross hair shadows for center of field.
   e. Performer collimates to the smallest possible field obtainable, including total closure of shutters.
   f. Sets appropriate kVp, mA and time exposure factors for the test in the control room.
   Checks that factor selections are visible from operator's position.
   g. If unit has more than one x-ray tube, selects appropriate tube mode and checks that selection is indicated at control panel and on or near the tube selected.
   h. Makes exposure:

      i) During exposure checks that the exposure controls are of the "dead man" type, and that the exposure is terminated after the preset time interval for exposure. Checks that the tube head remains stationary when placed in exposure position.
      ii) Checks that an audible sound indicates end of exposure.

   i. Has test film processed or decides to do personally. After the test film is processed, performer examines film on view box.

      i) Notes if there is any image. If not, judges that minimum specifications have been met.
      ii) If there is an image, performer measures the two dimensions. Records test factors, field

TASK DESCRIPTION SHEET (continued)

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dimensions of image, and TFD used.

j. Compares the measured image dimensions with the standard for the maximum allowable dimensions for the smallest possible field size at the given TFD (such as 5 cm in each dimension or less, at a 100 cm (39.4 inch) TFD). Determines if the equipment conforms to the requirements.

4. If performer will check that the target-to-tabletop (object) distance (TOD, SSD) meets minimum requirements, may proceed as follows:

a. If the position of the target in the tube assembly is known, performer moves tube assembly to its lowest position and measures the target-to-tabletop distance. Records.
b. If the position of the target in the tube assembly is not known, but if the collimator housing or any permanently attached cone measures a distance equal to or greater than the minimum required distance from the tabletop (such as 12 inches or 30.5 cm), determines that the unit is in compliance.
c. If the location of the target must be calculated in order to check the minimum TOD, performer proceeds as follows:

i) Places a test film cassette on tabletop and centers to the vertical central beam.
ii) Performer attaches a radiopaque marker of known length directly to the bottom of the beam limiting device.
iii) Moves the tube assembly to its lowest position and measures the distance from the end of the beam limiting device to the cassette on the tabletop. Records.

List Elements Fully

iv) Treats the distance from the target to the bottom of the beam limiting device as the test TOD. Treats the distance from the bottom of the beam limiting device to the tabletop (film) as the test OFD.
v) Sets the technical factors for the test and makes exposure; and has test film processed.
vi) Measures the length of the test object image on the processed film. Records.
vii) Performer uses the formula for magnification (the ratio of the magnified length to the actual length of the marker equals the ratio of the TOD plus the OFD divided by the TOD) to solve for the test TOD.
viii) Once the distance from the target to the bottom of the beam limiting device is known, records and adds this figure to the measured minimum distance from the bottom of the beam limiting device to the tabletop. Records. Treats this distance as the unit's minimum TOD.

d. Compares the minimum TOD with the required minimum. If it is equal to or greater than the required minimum, judges that the unit is in compliance with relevant standard.
e. If performer will also check the target-to-film distance (TFD) indicator, records the indicated TFD with the unit still at the minimum TOD position.

i) If unit is set up to be used with film on tabletop, compares the calculated TOD with the indicated TFD and checks whether the figures are equal. Records difference.

TASK DESCRIPTION SHEET (continued)

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This is page 4 of 6 for this task.

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ii) If unit is set to be used with cassette in bucky tray, measures the distance from the tabletop to the cassette tray (OFD). Adds the minimum TOD to the OFD. Checks whether the sum of OFD plus TOD (TFD) is equal to the indicated TFD. Records difference.

iii) May repeat test at other common TFD positions by moving tube assembly as appropriate.

iv) Performer compares the actual TFD distances with those on TFD indicator. Calculates whether the differences are within acceptable limits (such as two percent of the indicated TFD).

5. If performer will check that the field sizes indicated on the collimation device project an exposure field as indicated at the level of the image receptor, at a given TFD, performer may prepare to make exposures at various commonly used field sizes and TFD settings:

a. Performer sets technical factors for test exposure.
b. Sets TFD and collimator settings for first appropriate field size, or allows for automatic collimation to adjust to cassette size.
c. If the collimated field is rectangular, places test film, sets collimator, and/or places cassette in bucky so that the longer and shorter dimensions correspond to the same position for each.
d. If the accuracy of the collimator settings is being checked, performer places cassette on table or in cassette tray. Marks with TFD and field size indicators.

List Elements Fully

i) Makes exposure(s) and has test film(s) processed.
ii) May repeat exposures at other commonly used TFD's and field size settings.
iii) Measures and records the dimensions of the exposed x-ray fields.
iv) Measures difference(s) between the length and width dimensions of the image(s) and the cassette size or indicated collimated field size settings. Records.

e. Performer may use indirect radiographic test of whether automatic and/or manual collimation will limit the exposure field within the dimensional limits appropriate to the size of the image receptor (such as a cassette in a bucky tray):

i) Sets TFD for a commonly used target to image receptor distance.
ii) Sets collimators manually to a standard field size or to the size of the cassette in tray, depending on whether automatic or manual collimation is being tested.
iii) Tapes a test film in a holder directly to the port of the beam limiting device.
iv) Prepares to use formula for magnification to determine the size of the exposure field at the level of the image receptor. Uses the distance from the target to the end of the beam limiting device (calculated earlier) as the test TOD. Measures the distance from the film to the image receptor and sets to equal the test OFD.

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v) Makes exposure and has test film processed. May repeat for other field sizes and TFD's.

vi) For each test film, measures the two dimensions of the field image. Sets these lengths as equivalent to the original lengths in the formula described above. Calculates the magnified lengths and sets these as equivalent to the exposure field at the level of the image receptor. Solves for the magnified lengths. Records.

f. For each test film, compares the actual or estimated exposure field dimensions with the corresponding collimated field dimensions or the corresponding cassette dimensions. Records differences for length and for width regardless of sign.

g. Calculates whether the separate and combined width and length errors as a percentage of the TFD for the test are within the permissible range.

6. If performer will check that there is alignment between the center of the x-ray beam and the center of the image receptor, may combine this test with one of the other tests described above or below. May proceed as follows:

a. Performer tapes a radiopaque marker to the center of a loaded test cassette and places in bucky tray. Moves tray onto appropriate position and activates automatic collimation control. May collimate further.

b. Sets TFD as appropriate and sets appropriate test exposure factors. Records.

c. Makes exposure and has film processed.

d. Performer determines the corners of the image recorded on the film:

List Elements Fully

i) Locates two points on each of the four sides of the image.

ii) Draws four straight lines, one for each side, each line connecting the two points on each side and intersecting the two lines at right angles to each side. Defines each intersection as a corner of the image.

e. Performer draws lines connecting each corner to its diagonal opposite. Defines the center of the image as the intersection of the diagonals.

f. Locates image of the center point marker as the center of the image receptor.

g. Measures the distance from the center of the image to the center of the receptor. Defines this as linear displacement or misalignment of the centers of the image receptor and the x-ray field.

h. Calculates the linear displacement as a percentage of the TFD for the test, and checks whether the error is within the acceptable range.

7. If performer will check the alignment of the light field and the x-ray beam, may proceed as follows:

a. Performer places a test film in cassette in center of table.

b. Adjusts the TFD to the test position (target to tabletop distance). Records.

c. Activates the light field and adjusts the beam limiting device (such as collimator) to the appropriate indicated field size appropriate to the test TFD.

d. Centers cassette so that the length and width dimensions of the cassette are parallel with the corresponding dimensions of the light field, with indicated center

TASK DESCRIPTION SHEET (continued)

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This is page 6 of 6 for this task.

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of light field at the center of cassette. Makes sure light field area is smaller than the cassette area.

   e. Performer places several radiopaque markers so that the outer edge of each marker corresponds with a side of the light field. May place marker at corners and/or at center.
   f. Sets appropriate technical factors; makes test exposure; and has film processed.
   g. On processed film, performer draws in lines to define the exposure area. Draws in contrasting lines connecting the outside edges of the images created by the light field markers placed on the cassette.
   h. Performer measures the two distances between the edges of the two fields for each dimension without regard to sign. Adds so that the length misalignment is the sum of two measures and the width misalignment is the sum of two measures. Records.
   i. Calculates the length and the width misalignments as percentages of the TFD. Checks whether error is within acceptable percentage range.

8. Based on the test results, performer determines whether the equipment being tested meets acceptable standards at given legislated requirements and any more rigorous local or institutional requirements.

   a. For new equipment, determines whether the unit should be refused or whether service staff should be required to make adjustments or replacement.
   b. For existing equipment, determines whether problem requires shut down of unit until adjustments or repairs are made.
   c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements.
   d. Performer may indicate on technique charts what compensations should be made for the inaccuracy of the particular unit. May inform appropriate technologist or makes changes on the technique charts for the unit, or posts notice calling for the proper adjustments; informs appropriate staff.
   e. If performer decides that the test results indicate a major fault, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit.
   f. If not already done, performer marks test records and films with date; may record evaluation of results and what was done. Performer places films and records in appropriate location for filing. Returns test materials to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 530

This is page 1 of 9 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Fluoroscopy equipment checked for appropriate field limitation, alignment, and other required features; image receptor and field alignment, positive beam limitation and minimum TOD radiographically checked; dimensions measured, calculated and compared with given acceptable limits; decision made to refuse equipment, repair; test results recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Legislated and/or institutional requirements for fluoroscopic and spot film diagnostic x-ray equipment; manufacturer's specifications; cassettes; radiopaque markers; tape; x-ray unit(s), spot film device; image intensifier and controls; collimator; test descriptions, test forms; pen, pencil; TV monitor; technique, tube rating charts; out-of-order sign; telephone; ruler; view boxes; tape measure; marking pen; lead shielding, aprons, gloves; beam attenuator

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; radiologist; repair service personnel or installers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking fluoroscopic and spot film x-ray field limitation, x-ray field and image receptor alignment, maximum TID, minimum TOD, and other requirements by inspecting, setting up radiographic tests; making exposures; calculating dimensions, differences from required dimensions, and whether differences are within acceptable ranges; arranging for replacement or repair; recording test results.

List Elements Fully

Performer checks that fluoroscopic and spot film equipment have acceptable minimum focal spot to tabletop distance and field size, adequate limitation of field size, and alignment of the x-ray field to the imaging surface, when informed that new equipment is to be checked or when periodically checking existing equipment as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer determines the equipment to be checked and the tests to be carried out.
    a. Notes whether the equipment involves use of image intensifier, spot film cassette device.
        i) Notes whether x-ray tube is positioned over or under the examination table.
        ii) Notes whether there is a variable collimator.
        iii) Notes whether target (focal spot or source)-to-image receptor (film or input phospher), distance (TID, TFD, FID, FFD, SID) is variable, and whether the distance from the input phospher to the tabletop, or from the focal spot to tabletop does not change with TID.
        iv) Notes whether equipment includes a TV monitor or optical viewing device.

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TASK DESCRIPTION SHEET (continued)

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v) Notes whether there is a dual-field image intensifier.

b. Determines appropriate tests, given the nature of the equipment.

c. Obtains standard test procedures, government standards, test forms and records, appropriate manufacturer's specifications, and test materials such as loaded test cassettes, beam attenuator, radiopaque markers and ruler.

d. Performer reviews technical exposure factors for fluoroscopy and spot filming tests to be done. Checks exposure factors against the posted limits of the x-ray tube on a tube rating chart to be sure that technique does not exceed the heat capacities of the tube for the focal spot size to be used.

e. Dons protective leaded rubber garments such as apron and gloves. Makes sure that no one is in examination or control room. May place shielding around non-remote controlled equipment.

f. In the control room performer makes sure that indicator light shows that x-ray generator is "warmed up" and ready for use. Makes sure that all circuits have been stabilized. If appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter.

g. As appropriate, performer sets x-ray generator mode selector(s) to fluoroscopic mode.

  i) If appropriate and not already done, performer connects TV monitor to power outlet. Turns on monitor and checks that "ready" light is on.

  ii) If appropriate, performer selects the larger field size selector (if there is dual image intensifier) for the tests.

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h. Removes all compression cones, removable grids, spot film carriage from the path of the primary beam.

2. Performer may check that equipment has standard required features:

  a. May check whether unit has UL approval for operation in areas with explosive gases. Checks that this information (or the reverse, that unit cannot be used near explosive gases) is clearly visible on machine.

  b. Checks that all exposed parts of the unit such as console, exposure switch, bucky tray, table and tube housing cable inserts have continuity to "ground." May check that ground connection is attached to a wall outlet.

  c. Checks that the control console and entrance to the room have appropriate warning signs.

  d. For units with bucky slots, checks that there is shielding to protect it during fluoroscopy.

  e. For mobile units checks for long cord.

  f. Performer selects and sets exposure factors for fluoroscopy for the first test:

    i) Selects and sets the kVp at standard setting for the test. May check indicator dial. With automatic density control, sets density selector as appropriate for test.

    ii) If mA is automatically controlled according to thickness of the object in the beam, turns fluoroscope mA selector to maximum standard position. If not automatically controlled, sets as appropriate for focal spot size and test involved.

TASK DESCRIPTION SHEET (continued)

Task Code No. 530

This is page 3 of 9 for this task.

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iii) Sets fluoroscopic examination timer to maximum position.

g. To check exposure controls, kVp and mA indications and tube-to-image intensifier linkage, may lay a fluorescent screen on table. May insert a beam attenuator to protect input phosphor.

i) Activates fluoroscope. Notes whether any x-rays are produced if the primary barrier (image intensifier assembly) is not in primary beam.

ii) Checks that the exposure control is of the dead man type.

iii) Checks that the kVp and mA are continuously indicated during exposure, that in high output mode there is a continuous audible sound.

3. Performer may test that the distance from the focal spot (target or source) to the object (skin, tabletop) (FSD, TSD, SSD, FOD, or TOD) is no less than the required minimum for the type of unit (such as 15 inches (38 cm) for new stationary units, 14 inches (36 cm) for existing units, 12 inches (30 cm) for mobile units).

a. Performer notes whether the tube assembly is under the table and a fixed distance from the tabletop, or over the table with the image receptor assembly a fixed distance from the tabletop, and selects appropriate test procedure.

b. Performer prepares for test:

i) May insert a beam attenuator and attach to tabletop, or to the bottom of image receptor assembly (depending on location of the tube) to protect the input phosphor.

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ii) Activates TV monitor or other viewing screen.

c. Moves tube assembly as close as it can be moved to the tabletop (unless distance is fixed, such as for an under-table tube assembly).

d. For an over-the-table tube assembly, lowers and measures the minimum distance from the bottom of the beam limiting device to the tabletop (BOD).

i) If BOD is equal to or greater than the minimum allowable TOD when the tube is as close to tabletop as possible, judges that unit is in compliance.

ii) If compliance has not been established, moves tube assembly to maximum distance and records the maximum BOD.

iii) Attaches a radiopaque marker to the center of the bottom of the beam limiting device and collimates to include image of marker. Records length.

iv) Sets appropriate technical factors. Makes exposure with tube at maximum BOD.

v) Performer measures the length of the image of the marker on the TV monitor or viewing screen. Records.

vi) Moves the tube to the minimum BOD position. Collimates and repeats procedure. Records the length of the image as above.

vii) Performer measures the distance from the tabletop to the viewing screen for non-image intensified fluoroscope, or the distance from the tabletop to the top of an image intensifier assembly plus the distance from the top of the intensifier as-

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sembly to the input phosphor. Sets this equal to the object-to-image receptor distance (OID).

viii) Performer calculates the minimum TOD by using the known figure for the OID, and the ratio of the first (max.) image to the second (min.) image. Solves for the distance from the bottom of the beam limiting device to the target (x) using equation in which the ratio of the length of the max. image to the min. image equals the ratio of: (the max. BOD, plus OID, plus x) to (min. BOD, plus OID, plus x). Once x is known, performer adds to the min. BOD to obtain the minimum TOD.

ix) As an alternate means of calculating the minimum over-the-table TOD, places test film cassette on tabletop. Treats as image receptor. With BOD in minimum position, makes exposure with marker as above. Processes film and measures length of image of the marker on the processed film. Treats target-to-end of beam column as test TOD (x), the end of the beam column-to-film as test OID. Solves for x using magnification equation in which the ratio of the actual length of the object to the magnified length is equal to x (or TOD) plus test OID, divided by the test TOD. Adds x to minimum BOD to obtain minimum TOD.

e. For an under-the-table tube assembly, performer may proceed as follows:

i) Prepares two radiopaque marker strips so that one is exactly twice the length of the other.

ii) Places the shorter strip on the tabletop, centered to the x-ray beam.

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iii) Attaches the longer strip to the viewing screen or the underside of the image intensifier (against the input phosphor).

iv) Sets appropriate technical factors and adjusts collimator to appropriate field size. May turn on TV monitor and adjust controls.

v) Activates fluoroscope. Moves screen or image receptor assembly up or down until the image of the two radiopaque strips appear to be equal in length as viewed on TV monitor, optical viewing device or viewing screen.

vi) Performer measures the OID (from the tabletop to the screen or input phosphor or image intensifier assembly). Records. Sets this as also equal to the minimum (fixed) TOD, since,at a twofold magnification,TOD equals OID.

f. Determines whether the minimum TOD is equal to or greater than the required minimum for the type of unit.

4. If performer will check that the smallest possible minimum field size at the maximum TID is no greater than acceptable standards (such as two inches in each dimension) may proceed as follows:

a. Sets up for test:

i) If not already done, places a beam attenuator centered to the x-ray beam on the table (for an over-the-table tube) or attaches directly under the image receptor assembly (for under-the-table tube).

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ii) Performer collimates to the smallest possible field obtainable, including total closure of shutters.
iii) Moves beam assembly to the maximum TID position.
iv) If not already done, turns on TV monitor.

b. Activates fluoroscope.

i) Views fluoroscope screen or image on TV monitor.
ii) If there is no image, performer makes sure that this is result of collimation by opening shutters, checking for image and closing shutters again.
iii) If no image appears, performer determines that unit is in compliance with minimum field size requirements. Records.

c. If checking without film and without image intensifier, performer may measure the size of the image directly on the screen. Records.
d. May place a grid, calibrated in inches or centimeters on the image receptor and read dimensions of image from the TV monitor. Records.
e. If checking with film and with under-the-table tube, performer may attach a film in holder directly to the bottom of the beam attenuator, which, in turn, was attached directly to the bottom of the image receptor.

i) Makes exposure and has film processed.
ii) Measures length and width of the image of the field on the film. Records.

f. Performer compares the measured image dimensions with the standard for the maximum allowable dimensions for the smallest possible field size at the maximum TID (such as two inches in each dimension or less). Determines if the equipment conforms to the requirements.

List Elements Fully

5. If performer will check that the x-ray field produced by a non-image intensified fluoroscopy tube does not extend beyond the entire visible area of the image receptor, may proceed as follows:

a. If not already done, may turn on TV monitor. Sets technical factors.
b. Moves image receptor as close as possible to tabletop.
c. Opens shutters of collimator to the maximum.
d. While viewing on TV monitor or other viewer, activates fluoroscope tube and observes image.

i) Increases distance between tabletop and image receptor until the image receptor is at its greatest distance from the tabletop.
ii) Notes whether there is an unilluminated border all around the visible area of the image receptor. If so, determines that unit is in compliance with limitation of field to imaging surface requirements.

e. If the illuminated area expands to the edges of the visible area of the image receptor, performer moves the image receptor closer to the tabletop until there is a small unilluminated border.

i) Adjusts shutters to produce a wider unilluminated border of about two inches.

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ii) Increases the tabletop to image receptor distance (OID) again.
iii) If the illuminated area continues to expand, performer determines that the equipment is not in compliance.
iv) If the illuminated area does not expand, performer increases the OID to the maximum.
v) Opens the shutters to the maximum.
vi) If the illuminated area does not expand, performer determines that the unit is in compliance.

6. If performer will check that image-intensifier equipment meets requirements for limitation and alignment of x-ray field and imaging surface, may proceed as follows:

a. Checks that the beam axis is perpendicular to the image receptor. Sets technical factors.
b. For an over-the-table tube unit with variable collimator and TID, and with OID that does not change with TID, performer may proceed as follows:

i) If not already done, places beam attenuator on table.
ii) Raises tube housing to the maximum TID. If not done automatically, opens shutters to maximum. Activates fluoroscope.
iii) If there is an unilluminated area around all the edges of the image receptor, determines that the unit is in field limitation compliance. Activates light system. If there is similar unilluminated border, determines that light field alignment is also in compliance.
iv) If compliance is not established, prepares to carry out appropriate procedures. Calculates maximum TOD as described earlier. If not already calculated, measures maximum BOD and adds figure obtained for the distance from the target to the bottom of the beam limiting device described earlier.
v) Calculates the maximum TID as the sum of maximum TOD plus OID. Checks that manufacturer's specification for the maximum TID is accurate or within the allowable range for compliance.
vi) Moves tube assembly to maximum TID position. Places a cassette with test film over attenuator on tabletop, and centers cassette to x-ray beam using light system.
vii) Adjusts collimators to the indicated field size appropriate to the test. Centers cassette so that the length and width dimensions of the cassette are parallel with the corresponding dimensions of the light field, with indicated center of light field at the center of cassette. Makes sure light field area is smaller than the cassette area.
viii) Places several radiopaque markers so that the outer edge of each marker corresponds with a side of the light field. May place markers at corners.
ix) Sets technical factors; makes exposure; and has film processed.
x) Performer draws in the dimensions of the exposure field on the processed film. Measures and records. Draws in the light field dimensions as shown by images of markers using a con-

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trasting line. Measures and records.

xi) Using the known figures for the calculated TOD and the OID above, the dimensions of the exposure fields on the processed film, the collimated field size dimensions, and the maximum TID, performer uses the magnification formula (described above) to calculate the acceptable field size dimensions and to calculate whether the obtained results are within an acceptable percentage range of the maximum TID.

xii) Calculates whether light field is aligned with exposure field within acceptable range. Measures the two distances between the edges of the light field and the exposure field on the processed film for each dimension without regard to sign. Adds so that the length misalignment is the sum of two measures and the width misalignment is the sum of two measures. Records. Calculates the length and the width misalignments as percentages of the maximum TID. Checks whether error is within acceptable percentage range.

c. For an under-the-table tube fluoroscope unit with variable collimator and TID, and an object (tabletop)-to-input phosphor distance (OID) that does not change with TID, performer may proceed as follows:

i) If not already done, attaches a beam attenuator to the bottom of the image receptor housing. Raises the image receptor housing to the maximum. Opens shutters to maximum.

ii) Activates fluoroscope. If there is an unilluminated area all around the visible area, determines that the unit is in compliance.

List Elements Fully

iii) If compliance is not established, places radiopaque markers (between exposures) on the length and width edges of the visible area of the image receptor.

iv) Centers a loaded test cassette on table over the test markers. May mark left and right.

v) If not already done, calculates the TOD as described earlier. Sets the OID to appropriate distance.

vi) Calculates the TID as the sum of the TOD plus OID. Records.

vii) Sets technical factors; makes exposure; has film processed.

viii) On the processed film, measures the distance from the exposed field area to the outer edges of the markers showing the visible area. Calculates the sum of the two width errors and the sum of the two length errors (or as appropriate for circular field). Records.

ix) Calculates whether the exposure field differs from (exceeds) the visible area of the image receptor within acceptable percentage limits of the TID.

7. If performer will check spot film field limitation, may proceed as follows:

a. Sets up for exposures:

i) Makes sure performer is wearing appropriate protective lead apron and gloves, and that any appropriate protective shielding around the equipment is in place.

ii) While equipment is in the fluoroscopy mode, performer acti-

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vates TV monitor or optical viewing device. Places a radiopaque marker on tabletop so that it is centered with respect to the visible viewing area.

b. Sets controls to spot film mode. Sets technical factors if not already done.

- i) For conventional manual exposure control, performer selects and sets the appropriate spot film time for the test.
- ii) For automatic exposure timing control, performer selects a density exposure control appropriate for the test.
- iii) Performer selects the appropriate mA for the test and the focal spot size to be used.
- iv) Performer selects and sets kVp by combining settings on major and minor kVp selectors as appropriate for the test.
- v) Sets control on image intensifier for spot film cassette device to appropriate size film cassette exposure, such as one-on-one (full cassette) exposure.
- vi) Performer sets the TID, calculated as a measured tabletop (object)-to-spot film plane (image receptor) distance (OID), plus the calculation of the TOD (as described above). Records the TID to be used and locks tube into position, centered over marker and at right angles to tabletop.
- vii) Uses right or left marker; identifies film. Inserts spot film cassette into tray and moves into ready position. If not automatically done, activates the positive beam limiting device.

List Elements Fully

c. Makes exposure by operating spot film exposure control. Sets up for second exposure.

- i) Removes cassette from spot film device.
- ii) Inserts an empty cassette of the same size. Resets controls exactly as for first exposure.
- iii) Centers a loaded and identified film in holder on tabletop over the radiopaque marker on table. Uses right or left marker as before.
- iv) Makes exposure. Has the two films processed.

d. Calculates what the field exposure area in the empty cassette would be, using the tabletop film image:

- i) Draws right-angle intersecting lines, parallel to length and width dimensions, through the image of the mark at the center of the cassette. Decides on the order in which to measure the line segments in relation to the right or left marker. Measures the two width dimension segments and the two length dimension segments separately. Records.
- ii) Calculates the spot film plane exposure field dimensions by using the magnification formula in which the ratio of the magnified length (unknown) of a given dimension to its (measured) counterpart is equal to the ratio of the TOD plus the OID, to the TOD. Calculates the two length and two width line segments to correspond with the measured segments described above.

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iii) On the processed film from the spot film cassette, performer repeats the measurements from the center mark in all four directions and records so that all four can be compared with their respective counterparts as calculated. Records.

iv) Performer calculates and adds the two width differences and the two length differences without regard to sign, resulting in a total length and a total width difference.

v) Calculates the area differences and the combined length and width differences as a percentage of the TID. Determines whether these are within the acceptable percentage range.

e. To check that the spot film device adjusts the x-ray field to the portion of the spot film selected, performer places markers in the center of cassette and the center of each quadrant of loaded spot film cassette. Inserts in bucky tray.

i) Sets spot film program to quarter format.

ii) Activates spot film device one or more times. Removes cassette and has film processed.

iii) Performer checks that only the area(s) designated received exposure.

iv) May check the centering by drawing in lines connecting the center marker image with the center marker images of each exposed quadrant and comparing the lengths and angles. Checks that centering is comparable for each quadrant.

List Elements Fully

8. Based on the test results, performer determines whether the equipment being tested meets acceptable standards at given legislated requirements and/or any more rigorous local or institutional requirements.

a. Determines whether new unit should be refused or whether service staff should be required to make adjustments or replacement.

b. Determines whether problem requires shut down of unit until adjustments or repairs are made.

c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements.

d. If performer decides that the test results indicate a major fault, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit.

e. If not already done, performer marks test records and films with date; may record evaluation of results and what was done. Performer places films and records in appropriate location for filing. Returns test materials to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 531

This is page 1 of 4 for this task.

1. **What is the output of this task? (Be sure this is broad enough to be repeatable.)**

Diagnostic x-ray tube overload protection tested; effective focal spot size measured; test results calculated, evaluated for acceptability; decision made on need for repair, replacement; tests recorded; results placed for filing; service personnel notified if appropriate.

2. **What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)**

Requirements and charts on test standards for overload and focal spot size measurements; manufacturer's specifications; tube rating charts; test descriptions, charts, report forms; paper, pen, pencil; x-ray units (overhead and/or fluoroscopic), control panel, x-ray tube(s); protective lead garments, shielding; test bar pattern or star pattern test object; beam attenuator; test stand; x-ray film in holder; radiopaque marker; cassette; view box; pin hole diaphragm; magnifying glass-scale combination; out-of-order sign; phone

3. **Is there a recipient, respondent or co-worker involved in the task?** Yes...(X) No...( )

4. **If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.**

Radiologist(s); supervisor; co-worker; repair or service personnel or installers

5. **Name the task so that the answers to questions 1-4 are reflected. Underline essential words.**

Testing whether diagnostic x-ray tube overload protection and/or effective focal spot size meet acceptable standards, by testing overload system for response at varying factor settings against tube rating chart without making exposure; measuring effective focal spot size using bar or star pattern images of radiographed test objects, and/or pin hole test with radiography and enlargement factor to calculate focal spot size; determining whether overload protection and/or focal spot size is within acceptable range; determining whether equipment needs replacement or repair; recording test results; arranging for repair or replacement.

List Elements Fully

Performer checks the tube overload protection system and/or measures the effective focal spot size of diagnostic x-ray tube(s) that have been newly installed or are checked periodically as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes the type of equipment to be tested, location and type of tests to be made. May note any information on problem with currently functioning equipment. May refer to standard test procedure records and/or manufacturer's specifications.

   a. Enters control room for designated machine. Checks to see that indicator light shows that x-ray machine is ready for use. Makes sure that it is warmed up and that all circuits have been stabilized. Checks line voltage meter and, if required, turns compensator dial until needle is aligned properly on line meter.
   b. Makes sure that no one is in examination room.
   c. For check of fluoroscope system dons leaded protective garments such as apron and gloves. May place shielding around equipment for non-remote controlled equipment.

OK-RP;RR;RR

6. **Check here if this is a master sheet..(X)**

TASK DESCRIPTION SHEET (continued)

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This is page 2 of 4 for this task.

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2. If performer will check that there is appropriate tube overload protection, may proceed as follows:

   a. Obtains the manufacturer's tube rating chart and the specifications of maximum system current.
   b. For tubes with more than one focal spot size, notes nominal sizes; plans to repeat appropriate test steps for each available focal spot size.
   c. Notes and sets the test kVp (such as 80 kVp) and test exposure time (such as 0.1 second).
   d. For the given focal spot size, notes the maximum rated tube current for the test kVp and time by reading tube rating chart. Records.
   e. Records the maximum current (higher than maximum rated tube current) available.
   f. Sets mA to maximum setting and notes whether there is signal indicating a technique overload. If not, considers unit not in compliance.
   g. If there is an overload signal, reduces mA setting progressively until an exposure setting is obtained at which exposure can be made without a signal of overload. Records setting. Does not make exposure.
   h. Calculates the maximum rated tube current as a percentage of the maximum system current available for single exposures. Records. Checks that it is within appropriate range for the type of tube and unit.
   i. Repeats for each available focal spot size.
   j. Determines whether overload protection system is operational within acceptable range.

3. If performer will measure the effective focal spot size, obtains manufacturer's specifications. Notes focal spot size. Determines whether unit is equipped with dual filament tube(s).

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If so, notes the effective focal spot size for each. Notes whether unit includes fluoroscopic system.

   a. Based on the manufacturer's specifications of the focal spot size (s), performer may select appropriate measurement method. May select pin hole camera test for fractional and small focal spot size; may select radiographic check using bar grid or star pattern as test for large focal spot sizes.
   b. If using a bar pattern test object (metal pattern of groups of bar slots and circles in pairs in metal mask with increasing calibrated spacing), obtains bar pattern mounted on test stand. Obtains a chart relating the nominal focal spot size with the number of groups that must be resolved on the test film. Obtains an aluminum plate or other beam attenuator for use with fluoroscopic system. May use a star pattern test object with radiating metal strips and corresponding guide for resolution.

      i) Prepares a preselected type of test film in holder without intensifying screen, and uses radiopaque marker to identify film.
      ii) With an over-the-table tube, places film on table; centers test object over film at a known distance (such as height of test stand). Centers tube at a standard distance over the test object, using light system. Collimates to test object.
      iii) With an under-the-table fluoroscope tube, places test object face down on table; places film on top of base of test stand; places beam attenuator on top of film holder.

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For dual focal spot, large-focus filming, may place an empty cassette in spot film tray. Collimates to test object.

iv) Sets technical test factors appropriate to type of equipment and nominal size of focal spot.

v) Makes exposure. May set up and repeat test using unexposed part of film for second available focal spot, or may plan to use separate film. Has test film(s) processed.

vi) Performer evaluates the resolution of the image(s). Judges whether a pair of grouped bars are resolved by noting whether both groups in a right angle pair have all bars clearly visible. Compares number of groups resolved with number that must be resolved for the given nominal focal spot size on the chart. Evaluates star pattern image similarly. Records.

vii) If not already done, repeats for second focal spot and/or other tube(s).

c. If performer will use pin hole camera test, performer determines the location of the focal spot in the tube assembly. Notes whether unit has line-focus tube or nonrectangular focal spot.

i) Obtains appropriate chart showing pin hole diaphragm dimensions required for nominal focal spot sizes and related requirements. Obtains a pin hole diaphragm of appropriate material with appropriate cross-sectional thickness, bore, and angulation of pin hole. Obtains appropriate test film, description of test factors, magnifying glass with built-in scale, and measurement steps for the type of tube and generator involved.

ii) Sets up film in holder. Centers central beam at right angles to pin hole diaphragm and film. Places diaphragm so that pin hole is standard test distance from focal spot (target) to pin hole (object) (TOD); places film standard test distance from pin hole to film (OFD). Calculates "enlargement factor" as ratio of OFD to TOD. Sets technical factors for test as prescribed for type of tube and voltage rating.

iii) Makes exposure and has film processed. Places processed film on view box.

iv) Measures the image of the focal spot using appropriate magnifying glass with scale. Measures width, length and all perceptible portions of image, and/or all relevant dimensions. Divides each measured dimension by the enlargement factor. Makes additional multiplication (by 0.7) for length of focal spot for line-focus tubes. Records all calculations and measurements.

v) If appropriate, performer repeats test or uses appropriate test for the second focal spot or other tube(s).

d. Performer compares the manufacturer's listed specification of the effective focal spot size(s) with the test results. Records. Determines whether any difference is within acceptable range.

4. During the course of the testing, may observe and note whether

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meters, dials, light signals and other indicators are functioning, whether the x-ray tube hanger is stable. 5. Based on the test results, performer determines whether there is adequate tube overload protection and/or whether the effective focal spot size is as represented, within acceptable limits, given any legislated requirements and any more rigorous local or institutional requirements. a. For new equipment, determines whether the unit should be refused or whether service staff should be required to make adjustments or replacement. b. For existing equipment, determines whether problem requires shut down of unit until adjustments or repairs are made. c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problem(s) and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements. d. Performer may inform repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test(s) and the unit involved. May place out-of-order sign on unit. e. If not already done, performer marks test records and any test films with date; may record evaluation of results and what was done. Performer places test films and any other records in appropriate location for filing. Returns test equipment to storage or has this done.	

TASK DESCRIPTION SHEET

Task Code No. 532

This is page 1 of 4 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Exposure timer of diagnostic x-ray equipment checked and/or tested for accuracy by means of functional check and/or direct measurement with radiation detector and pulse counter,chronometer,or oscilloscope;reproducibility,variation calculated;decision made on need for repair,replacement,change of technique charts;tests recorded;results placed for filing;service personnel notified if appropriate.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Legislated and/or institutional requirements for diagnostic x-ray equipment;manufacturers' specifications;pulse counter,chronometer,or oscilloscope; radiation detection device;camera;tape;diagnostic x-ray unit(s) and controls;collimators;test descriptions,test forms;pen,pencil;technique,tube rating charts;out-of-order sign;telephone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologist(s);supervisor;radiologic technologist(s); co-worker;repair or service personnel or installers

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Checking and/or performing direct calibration tests of diagnostic radiography equipment exposure timers by checking correct type and functioning;testing time selectors with radiation detection device and pulse counter,chronometer or oscilloscope during exposure;calculating accuracy range,reproducibility; determining whether timer needs replacement,repair, and/or change in technique charts;recording test results;arranging for repair.

List Elements Fully

Performer checks the exposure timer(s) of diagnostic x-ray equipment which has been newly installed, or checks current equipment periodically, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer determines reason for timer check, type of equipment, type of rectification and phase system involved, and type of test to run. Refers to manufacturer's specifications. May decide to have spinning top test done or to do personally.

2. If evaluating new equipment with respect to timer regulations, performer may note any or all of the following, depending on the type of equipment involved:

   a. Notes whether equipment has a timer or selector involving time such as mAs selector, pulse selector, or radiation exposure selector.
   b. With stationary x-ray equipment, checks that controls for technical factors are in properly shielded control room. Checks that exposure cannot be made unless the performer is behind protective barrier.
   c. Performer may set technical factors within safety

OK-RP;RR;RR

6. Check here if this is a master sheet..(x)

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limits determined by tube rating chart and/or uses predetermined test factors as described below.

d. Initiates exposure and checks that exposure terminates automatically as appropriate.

e. Checks that timer or equivalent selector automatically returns to zero position or initial setting at end of exposure.

f. Sets timer or selector to zero or off position and attempts to make exposure. Checks that no exposure can be made.

g. For fluoroscopy timer checks that the maximum cumulative time available without resetting is no greater than the current standard (such as five minutes). Checks that when maximum time is reached performer can hear a signal indicating that the time is completed and/or that exposure is terminated.

3. If doing calibration test (other than spinning top test), performer selects appropriate test equipment based on the type of system to be tested and the design of the institution's calibration quality control program. Performer may prepare to use a pulse counter for a single-phase, half- or full-wave rectified system, a chronometer for a three phase system, or an oscilloscope for three-phase, single-phase or capacitive discharge system. May refer to standard test procedure records and/or manufacturer's specifications.

4. Performer uses proper precautions with regard to shock hazards and sets up the test equipment.

   a. Depending on test procedures, performer obtains an appropriate radiation detector such as an ionization chamber, silicon diode, silicon solar cell.

   b. Mounts detector in the field of the x-ray beam. May tape to bottom of collimator assembly or place on examination table.

   c. If not already done, connects detector to appropriate measuring instrument such as pulse counter, chronometer or oscilloscope in the control room using shielded cable.

      i) May set up a camera to make permanent record from oscilloscope screen.

      ii) May check that oscilloscope has had sweep rate calibrated.

   d. Checks to see that indicator light shows that x-ray machine is ready for use. Makes sure that it is warmed up and that all circuits have been stabilized.

      i) Checks line voltage meter and, if required, turns compensator dial until needle is aligned properly on line meter.

      ii) If appropriate, turns on oscilloscope; allows time for it to warm up. Sets and adjusts controls to obtain clear readings.

      iii) Performer sets kVp and mA selectors at appropriate test positions.

      iv) Sets timer for first test position. May plan to check all timer settings or those designated in test design.

      v) Sets up record sheets to record test data. Enters factors for first test station and date.

      vi) Performer checks manufacturer's tube rating chart to be sure that the test stations will not exceed the instantaneous rat-

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ings, or the total anode heat capacity for the tube.

vii) Performer makes sure that collimator and beam column are in appropriate test position.

viii) Makes sure that no one is in examination room.

5. Performer makes first exposure and records time.

   a. With pulse meter notes the number of pulses displayed by the instrument. To obtain exposure time, divides by 1/60 for half-wave rectification and by 1/120 for full wave rectification. Records.
   b. With chronometer records exposure time displayed.
   c. With calibrated oscilloscope, reads exposure time from oscilloscope screen. May decide to use camera to record oscilloscope image.

6. If appropriate to test the reproducibility of the exposure time, repeats exposure at the same settings the appropriate number of times. Records.

7. Performer continues to make test exposures and record for all timer positions or as appropriate for test. Repeats for each setting if testing reproducibility.

8. When all test exposures have been made and recorded, performer compares results with predetermined acceptable accuracy ranges.

   a. May check that variations are within acceptable limits.
   b. May calculate average time for each setting. May check that the average exceeds the range between the maximum and minimum readings multiplied by a constant such as 5.

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   c. If limits are not met for a minimum number of observations, performer may repeat tests to obtain additional test data and recalculate.

9. Based on the test results, performer determines whether the accuracy of the timer and its reproducibility are within acceptable limits, given legislated requirements and any more rigorous local or institutional requirements.

   a. For new equipment, determines whether the unit should be refused or whether service staff should be required to make adjustments or replace timer.
   b. For existing equipment, determines whether problem requires shut down of unit until adjustments or repairs are made, or whether technique charts can be modified to account for timer error at given settings.
   c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements.
   d. If test results indicate that specific timer settings are inaccurate and if radiologist approves, performer may indicate on technique charts what compensations should be made for the inaccuracy of the particular station. May inform appropriate technologist or makes changes on the technique charts for the unit, or posts notice calling for the proper adjustments; informs appropriate staff.
   e. If performer decides that the test results indicate a major fault,

TASK DESCRIPTION SHEET (continued)

Task Code No. 532

This is page 4 of 4 for this task.

List Elements Fully	List Elements Fully
performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit. f. If not already done, performer marks test records with date; may record evaluation of results and what was done. Performer places records in appropriate location for filing. Returns test equipment to storage or has this done.	

TASK DESCRIPTION SHEET

Task Code No. 533

This is page 1 of 2 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Phototiming device checked for automatic exposure termination at constant density; test films measured for density; density control accuracy calculated and compared with given acceptable limits; decision made to refuse equipment, repair; test results recorded.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Requirements for diagnostic radiography phototiming equipment; manufacturer's specifications; cassettes; radiopaque markers; diagnostic radiography unit, controls; test descriptions, forms; pen, pencil; test phantoms; densitometer; out-of-order sign; phone

3. **Is there a recipient, respondent or co-worker involved in the task?** Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevent condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; radiologist; repair service personnel or installers

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Checking automatic exposure termination of diagnostic radiography equipment by making test exposures at constant density settings with different kVp's or different phantom thicknesses; using densitometer to measure density of exposed films; calculating accuracy; determining whether automatic timer needs replacement, repair; recording test results; arranging for repair.

List Elements Fully

Performer checks the automatic exposure termination device of diagnostic x-ray equipment which has been newly installed, or checks current equipment periodically, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer determines reason for check and type of equipment. May proceed as follows:

    a. Performer notes whether test will be made for three kVp settings at a normal density control setting and mA range, or at a fixed kVp with three phantoms of different densities at the normal density control setting, depending on type of equipment. Checks manufacturer's specifications.
    b. Obtains appropriate phantom(s) and densitometer.

2. Performer sets up for test:

    a. Obtains cassettes loaded with uniform type of test film (from same batch) and screen combinations.

        i) Identifies cassettes as appropriate for test using radiopaque markers.
        ii) Inserts first cassette in bucky tray of x-ray unit or spot film unit, or advances film as ap-

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 533

This is page 2 of 2 for this task.

List Elements Fully

propriate (such as for automatic changer).

b. Places phantom (or first of three phantoms) on tabletop, and centers to film using appropriate optical system. Sets tube to appropriate target-to-film distance.
c. Sets technical factors as appropriate to type of automatic exposure termination system.

   i) Sets for automatic exposure mode and normal density setting.
   ii) If appropriate sets test mA or first kVp setting.

3. Performer makes first exposure as appropriate and continues with test:

   a. Removes cassette.
   b. Inserts new cassette in tray and either sets kVp to a lower test position or places a second phantom on table. Makes exposure.
   c. Removes cassette. Inserts a new cassette and either sets kVp to a higher test position or places a third phantom on table. Makes exposure.
   d. Performer has exposed test films processed under standard conditions.

      i) May personally check that standard processing conditions are met.
      ii) Uses densitometer to measure density on exposed test films.
      iii) May use control test film to subtract background density.
      iv) Records measurements from densitometer.

4. Performer determines whether the densities of the three films are the same or within an acceptable range of each other. Refers to test standards.

List Elements Fully

a. For new equipment, determines whether the unit should be refused or whether service staff should be required to make adjustments or replace phototiming unit.
b. For existing equipment, determines whether problem requires shut down of unit until adjustments or repairs are made.
c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements.
d. If performer decides that the test results indicate a major fault, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit.
e. If not already done, performer marks test records with date; may record evaluation of results and what was done. Performer places records in appropriate location for filing. Returns test equipment to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 534

This is page 1 of 2 for this task.

1. **What is the output of this task? (Be sure this is broad enough to be repeatable.)**

Leaded gonadal shielding, aprons, gloves manually inspected, tested for lead equivalent thickness; decision made on discarding, repairing, replacing; test and/or inspection recorded.

2. **What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)**

Shielding such as lead aprons, gloves, sheets, screens, gonadal shields; diagnostic x-ray or fluoroscopic equipment; test procedure requirements, forms, regulations; calibrated lead test standard; pen; phone

3. **Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )**

4. **If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.**

Repair service personnel; co-worker

5. **Name the task so that the answers to questions 1-4 are reflected. Underline essential words.**

Providing visual and radiographic or fluoroscopic inspection of personnel shielding devices such as leaded gloves, aprons, sheets, gonadal shields by manually examining; checking for lead equivalent thickness of shielding using fluoroscopy or overhead filming; arranging for repair, replacement; recording inspection and test results.

List Elements Fully

Performer inspects diagnostic radiography protective shielding (gloves, aprons, gonadal shielding, screens) when new, periodically, or as a result of reported problem, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do personally.

1. Performer determines the type of shielding to be checked, whether manual check, radiographic check, the location of the shielding, and whether any problem has been reported.

2. If performer is making spot check or check of a number of personnel shielding devices, collects the appropriate gonadal shields, aprons, sheets, gloves to be inspected.

3. If making manual check, examines each item.

   a. Checks for cracks, damage to any surface, whether the items are in good condition and can be positioned properly.
   b. Sets aside damaged parts. May record.

4. If performer is making radiographic or fluoroscopic check, notes the appropriate lead equivalent thickness required of the shielding screens, garments, flat

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TASK DESCRIPTION SHEET (continued)

Task Code No. 534

This is page 2 of 2 for this task.

List Elements Fully

sheets, aprons or gloves. For double thickness items such as gloves, considers appropriate lead equivalent.

a. For fluoroscopic check of shielding performer may proceed as follows:

   i) Unless remote control will be used, dons protective leaded rubber garments such as apron and gloves. Makes sure that no one is in examination or control room. May place shielding around equipment.
   ii) In the control room performer makes sure that indicator light shows that x-ray generator is "warmed up" and ready for use. Makes sure that all circuits have been stabilized. If appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter.
   iii) As appropriate, performer sets x-ray generator mode selector to fluoroscopic mode. Sets appropriate technical factors and positions tube or image receptor at test distance from tabletop.
   iv) If appropriate and not already done, performer connects TV monitor to power outlet. Turns on monitor and checks that "ready" light is on.
   v) Performer may place items to be checked flat on the table; flattens and smooths items such as gloves. May place calibrated test object of the appropriate lead equivalent thickness on table to use as a standard.
   vi) Performer centers and collimates to the items on the table.
   vii) Makes exposure and examines items on TV monitor or viewing screen. Notes whether the items being checked appear as totally dense areas equivalent to the

List Elements Fully

density of the calibrated lead test standard.
   viii) Notes any light cracks or bright areas. Notes if density appears to be less than test standard "shadow." If so, determines that item is defective.

b. Performer may do radiographic test of shielding. If so, places x-ray film under objects on table.

   i) Sets technical factors as appropriate for overhead filming.
   ii) Makes exposure and has film processed.
   iii) Examines film similarly as described above for fluoroscopic check.

c. Repeats test until all the items have been checked for damage or inadequate lead equivalent thickness.
d. Performer may determine whether shielding appears to meet minimum lead equivalent standard (such as 0.5 mm. lead).
e. May decide to discard, replace items, or has this done.

5. If performer decides that any items tested or inspected are damaged or defective, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the items involved. May arrange for replacements.

6. If not already done, performer marks test records and/or films with date; may record inspection and evaluation of items and what was done. Places records in appropriate location for filing. Returns equipment to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 535

This is page 1 of 5 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Diagnostic x-ray equipment kVp, mAs, exposure rates, kVcp, reproducibility tested, calculated, evaluated by use of direct measurement and/or radiographic comparison; results evaluated and decision made on need for repair, replacement, change of technique charts; tests recorded; results placed for filing; service personnel notified if appropriate.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Legislated and/or institutional requirements for kVp, mAs,exposure rates for diagnostic equipment;mfr.'s specifications;survey meters and equipment;diagnostic x-ray unit(s) and controls;filters,collimators, TFD indicators;test descriptions;kVp,mA,mAs measuring instrument(s);report forms,graph paper,pen,pencil; oscilloscope;test cassettes;x-ray films;ionization chamber,electrometer;technique,tube rating charts; out-of-order sign;phone;view boxes;densitometer

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologist(s);supervisor;radiologic technologist(s); co-worker;repair or service personnel or installers

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Performing calibration tests of kVp,mA,mAs,exposure rates,reproducibility on diagnostic radiography equipment using direct measuring instruments and/or radiographic comparisons by carrying out approved tests of kVp,waveform,kVcp,mAs,exposure rates with variable kVp and mA at appropriate technical factors; taking direct readings of current,kilovoltage,waveforms during exposures, or making appropriate exposures with calibrated test cassettes using visual comparisons or densitometer;calculating average exposure ratios, coefficients of linearity,variation; evaluating test results;determining whether equipment needs replacement,repair,further testing,change in technique charts:recording test results;arranging for repair.

List Elements Fully

Performer checks the peak kilovoltage, tube and filament current, output or exposure rate of diagnostic x-ray equipment which has been newly installed, or checks current equipment periodically, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Depending on institutional procedures and calibration quality control program, performer may prepare to make direct measurements of peak kilovoltage, check kVp waveform, and/or use exposed films as a measure of peak kilovoltage or effective kilovoltage constant potential. May refer to standard test procedure records and/or manufacturer's specifications.

    a. For direct measurement of peak kilovoltage, performer uses proper precautions with regard to shock hazards, and sets up measuring equipment.

        1) Enters control room for designated machine. Checks to see that indicator light shows that x-ray machine is ready for use. Makes sure that it is warmed up and that all circuits have been stabilized. Checks line voltage meter and, if

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6. Check here if this is a master sheet..(X)

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required, turns compensator dial until needle is aligned properly.

ii) May set up kVp measuring system which uses capacitor compensated voltage dividers connected to a calibrated peak reading memory voltmeter. Removes high voltage cables from x-ray tube and inserts into voltmeter, taking proper safety precautions. Connects so as to measure the voltage between the x-ray tube electrode and ground or total voltage across tube.

iii) If kVp waveform is to be checked as separate test, sets up so that voltage dividers provide inputs to oscilloscope. Turns on oscilloscope; allows time for it to warm up. Sets controls to obtain clear readings such that the base line is at the bottom oscilloscope scale and the trace peak is at the top scale, with a complete waveform occupying the horizontal scale, or as appropriate. May prepare linear graph paper to copy the x-ray output waveform as displayed on the oscilloscope.

iv) Performer checks that appropriate standard filtration for the test is present. May plan to add filtration to the beam as part of the test.

v) Performer prepares to measure kVp at appropriate kVp settings. Sets selectors for first kVp station.

vi) Sets exposure timer for appropriate test position, such as 0.1 second.

vii) Sets mA for first setting; may plan to measure kVp at appropriate mA stations.

viii) Sets up record sheets to record test data. Enters factors for first test station and date.

ix) Performer checks manufacturer's tube rating chart to be sure that repeated exposures will not exceed the total anode heat capacity for the tube.

x) Makes sure that the collimator and beam column are in appropriate test position. Makes sure that no one is in examination room.

xi) Performer makes first test exposure. Records measured kVp. If appropriate, records or copies x-ray output waveform.

xii) Performer continues to make test exposures and records for all appropriate mA settings at the first kVp station, with all other factors held constant.

xiii) Repeats for all other test kVp stations as described.

xiv) May add filtration to the beam and repeat all test positions.

xv) When all test exposures have been made and recorded, performer compares results with predetermined acceptable accuracy ranges.

xvi) For kVp waveform check, evaluates exposure rate and area under waveforms as a function of kilovoltage, and/or function of added filtration in relation to appropriate standards.

b. If using radiographic comparisons to measure kVp and/or kVcp, performer obtains a calibrated kVp test cassette (which may be prepared with intensifying screens of one or more speeds in prearranged test arrangement).

i) Makes sure to use prepared test cassette appropriate for the test to be run, such as Ardran-Crooks cassette or modification.

ii) Loads cassette with appropriate x-ray film. Plans to repeat for each test exposure station, or move cassette to new area in

TASK DESCRIPTION SHEET (continued)

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holder that has leaded mask attached, or plans to move leaded mask to unblock the area to be exposed.

iii) Places loaded cassette or cassette in holder in position on examination table. Sets up equipment for standard filtration and TFD. Collimates as appropriate to the unmasked area to be exposed.

iv) Makes sure appropriate lead markers are placed on cassette to designate identification of unit, and date.

v) Sets factors to make test exposures at various predetermined kVp settings for appropriate mA stations at constant time and distance. Repeats until all test exposures have been made.

vi) Has exposed test film(s) processed. Places processed film(s) on view boxes.

vii) If the radiographic comparison is to be made visually, performer examines the density images of the two sets of dots (for each exposure). Determines where the density appears to be the same for a row. (If no such pair appears, determines that a serious problem exists.) Compares the value for the equal-density pair with the appropriate standard for the kVp setting, and determines whether this is within acceptable range. Repeats for each exposure image.

viii) If an optical densitometer is to be used, performer uses densitometer to measure kVp on exposed test films. Records measurements from densitometer; compares with kVp settings and acceptable range.

ix) If the test cassette is being used to measure effective kVcp, performer may compare exposure images of holes placed over fast and slow screens; determines the indicated Cu thickness that gives an optical density which is the same over the fast and slow screen for the given exposure. Determines effective kVcp by referring to appropriate calibration curve. Uses the results to determine the penetration quality of the effective beam for given technical factors (which is independent of phase and rectification). Considers whether the results are within acceptable limits.

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2. Depending on institutional procedures and calibration program, performer may prepare to make direct measurements of x-ray tube current, filament current, output in mR/mAs units, or to use radiographic comparisons as described above. Prepares to note variation in output. May refer to standard test procedure records and/or manufacturer's specifications.

   a. For direct measurement of filament current, performer may insert an mA meter across the filament circuit, taking proper precautions against shock hazard.
   For direct measurement of mAs, performer attaches an mAs meter or digital voltmeter calibrated to read mAs as appropriate. May place in the neutral or ground lead from the x-ray transformer, in the secondary circuit near ground potential, or in series with the anode conductor to the x-ray tube, taking precautions against shock hazard, or using a high-potential insulated milliampere meter connected directly to the high voltage circuit.
   To measure exposure, performer may connect an ionization chamber connected to an electrometer that is set to measure charge at a standard distance from the target and centered in a specified field size

List Elements Fully

such as is typical for machine usage.

- i) Checks line voltage and warms up machine as described above if not already done.
- ii) Selects a low kV setting or the one used regularly for the test.
- iii) Sets milliamperage setting at the lowest indicator for start of test.
- iv) May select a milliamperage-second setting to be constant for entire test. May select minimum exposure time of one second or more, or checks the mAs used in prior tests.
- v) For each setting on milliamperage selector chooses the timer setting that will result in the mAs selected (mAs = time x mA). With limited settings, chooses closest approximation to the desired timer setting. Checks tube rating chart to be sure settings are within safety limits of the tube.
- vi) Checks that filtration is appropriate for test conditions.
- vii) Performer makes exposures and records readings at the various settings.
- viii) For each mA selector, may calculate averages of readings and plot results as a percent variation from the average.

b. For radiographic comparision, performer may set up tests in examination room as described above, using markers to indicate the technical factors selected and/or identify unit being tested and date.

- i) Carries out test using calibrated cassette as described above, so that a series of images are recorded with kVp and other variables constant and timer adjusted to provide constant mAs, while mA is graduated (by changing the mA for each of the unit's mA settings from the lowest to highest).

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- ii) Has film(s) processed and places for review as described above.
- iii) Uses results to evaluate variability of output at different mA settings. Since mAs, kVp, distance, and filtration are constant, uses optical differences to evaluate whether output varies within acceptable bounds.
- iv) Records as appropriate.

3. Performer may determine overall exposure reproducibility:

   a. May calculate the coefficient of variation of the radiation exposure for each combination of selected technical factors. Compares with acceptable limits.
   b. May calculate linearity of current based on average mR/mAs values calculated for each of two consecutive tube current settings for standard technical factors. Compares coefficient of linearity with acceptable limits.
   c. May calculate average exposure ratios for consecutive tube current settings and determine whether these differ within an acceptable product of their sum.
   d. If limits are not met for a minimum number of observations, performer may repeat tests to obtain additional test data and recalculate.

4. Based on the test results, performer determines whether the output quality and quantity, and exposure reproducibility of the unit are within acceptable limits, given legislated requirements and any more rigorous local or institutional requirements.

   a. For new equipment, determines whether the unit should be refused or whether service staff should be required to make adjustments or

TASK DESCRIPTION SHEET (continued)

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replace parts, provided that the test used is appropriate for evaluation of new equipment. If routine test was used, may decide to have more rigorous test carried out. b. For existing equipment, determines whether problem requires shut down of unit until adjustments or repairs are made, or whether technique charts (for conventionally timed equipment) can be modified to account for normal deterioration of output quality. c. Performer may discuss results of test with supervisor, chief radiologic technologist and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements. d. If test results indicate that kVp or mA settings are consistently too low (or too high) and if appropriate staff member approves, performer may indicate on technique charts what compensations should be made for the inaccuracy of the particular selector. May inform appropriate technologist or makes changes on the technique charts for the unit, or posts notice calling for the proper adjustments; informs appropriate staff. e. If performer decides that the test results indicate a machine fault rather than normal decline in the output, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit. f. If not already done, performer marks test records and films with date; may record evaluation of results and what was done. Performer places test films and any other records in appropriate location for filing. Re-	turns test equipment to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 536

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Diagnostic radiography system inspected and checked for mechanical parts integrity; electrical safety checked visually; bulbs in view boxes checked; minor adjustments made; damage reported; inspection recorded; repair or replacement arranged.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Diagnostic radiography equipment; hardware, accessories, cones, beam limitation devices, filters, wiring, cables; hand tools; angulation and position measuring devices; inspection records; pen, pencil; phone; view boxes and bulbs; light meter; bulb replacement schedule

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Repair service personnel; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Providing visual and/or manual inspection of diagnostic radiography system, by checking hardware, movable parts, position locks, beam limiting devices, illuminators visually and manually; checking wires and cables for damage, proper draping, proper grounding; checking accuracy of beam angle and positioning indicators; recording inspection; arranging for repair, replacement.

List Elements Fully

Performer provides mechanical, visual and/or manual check of diagnostic radiography equipment periodically, as the result of a reported problem, or for new installation as a result of:

a. Regular assignment.
b. Request.
c. Decision to do personally.

1. Performer determines the type of equipment to be checked, what to check, the location of the equipment, and whether any problem has been reported. May obtain hand tools. Goes to appropriate location.

2. If checking the mechanical integrity of the diagnostic system, may visually observe or manually check as follows:

   a. Checks for loose or absent nuts, bolts, screws, washers, etc. May tighten hardware, record missing hardware.
   b. Checks that tube hanger, bucky, vertical cassette holders, and/or fluoroscopic image receptor are stable and properly mounted. Records any problems.
   c. Checks position locks and notes whether these are functioning adequately. Records problems.
   d. Checks collimators and beam limiting devices. May operate field size controls and check wheth-

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

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er shutters are working properly. Visually examines.

  i) Checks collimator face to see that it is clean and transparent. With plastic filter faceplate, checks whether color is brownish and filter needs replacement. Checks that sheet plastic faceplate is intact and dust free.
  ii) Checks for cracks, damage to any surface, whether parts are in good condition and can be positioned properly.

e. Sets aside damaged parts. Records.

3. If visually checking electrical safety of system, performer may do any or all of the following:

   a. Examines the external condition of the high voltage cables.

      i) Makes sure that retaining rings at the termination points are tight.
      ii) Examines insulation and shielding for breaks or signs of strain.
      iii) Examines draping of cables. Notes whether they can interfere with positioning of x-ray tube or image intensifier. Examines cables for any severe bending.
      iv) May readjust draping to put less stress on cable or to move out of the way of tube.
      v) Records any damage noted.

   b. Performer inspects power cords, wires to exposure hand switch and any other exposed wiring and notes any fraying, breaks, signs of wear.
   c. Checks that all components are properly grounded.
   d. Records.

List Elements Fully

4. If checking view boxes (illuminators), makes sure that bulbs used for evaluation in film processing area match in age, color, brand, type and brightness rating the bulbs used by the radiologists, and especially match in adjacent view boxes.

   a. May check annual schedule of bulb replacement.
   b. May use light meter to measure the brightness in all four quadrants of illuminator. Records. Calculates whether there is adequate uniformity across the quadrants of an illuminator, across adjacent illuminators, and/or between illuminators in processing area(s) and radiologic interpreting area(s). Checks if nonuniformity is within acceptable limits. Records.

5. Performer may use standard angle measures, protractor, T-square, and/or level to check accuracy of x-ray tube angle indicators and position scales.

6. If performer decides that any items inspected are damaged or defective, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the problem(s) and the items involved. May arrange for replacements.

7. Performer may record inspection and evaluation of items and what was done. Places records in appropriate location for filing. Returns repair equipment to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 537

This is page 1 of 6 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Tomographic x-ray equipment checked for mechanical functioning,fulcrum adjustment,resolution,exposure uniformity,grid alignment;test films evaluated,or accuracy calculated and compared with given acceptable limits;decision made to refuse equipment,repair;test results recorded.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Legislated and/or institutional requirements for diagnostic tomography x-ray equipment;manufacturers' specifications;cassettes;radiopaque markers;tape; tomography unit or attachments and controls;collimators;test descriptions,forms;pen,pencil;technique, tube rating charts;out-of-order sign;test phantoms of lead numbers,copper mesh;aperture plate;beam absorbers;test stand;ruler;plumb bob and line;liquid level;view boxes;marking pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. **If "Yes" to q. 3:** Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor;radiologist;repair service personnel or installers

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Checking diagnostic tomography x-ray equipment for mechanical operation,fulcrum position,resolution, exposure uniformity and/or grid alignment by setting up;making visual and mechanical checks;using test phantoms and making radiographic test exposures; evaluating test films and/or calculating differences from required standards;arranging for replacement or repair;recording test results.

List Elements Fully

Performer checks that diagnostic geometric tomography equipment has acceptable accuracy of fulcrum adjustment to the plane of interest, image resolution, exposure uniformity, grid alignment, and is in overall operational condition, when informed that new equipment is to be checked or when periodically checking existing equipment as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer takes note of the equipment to be checked and the tests to be carried out.
    a. Obtains standard test procedures, standards, test forms and records, the appropriate manufacturer's specifications; notes test materials.
    b. Performer obtains the various test phantoms and other test materials, cassettes of the appropriate sizes, with appropriate type and speed of film and screen combinations, and radiopaque markers for identifying test films and for use in the tests.
    c. Reviews appropriate technical factors for the various tests. Checks manufacturer's tube rating chart to be sure that the test stations will not exceed the instantaneous

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TASK DESCRIPTION SHEET (continued)

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ratings or the total anode heat capacity for the tube.

d. Checks the type of tube-film travel pattern,such as linear, circular, elliptical, or hypocycloidal tomography. Notes whether zonography is called for on tests (exposure angle of 10° or less). Notes the test exposure angle (amplitude), speed, the number of "cuts," and the level for the tests.

e. Checks that unit has been tested for conventional radiographic system tests such as calibration, position of focal spot, timer accuracy. If not already done, may arrange such tests or decide to do personally.

2. Performer makes sure that equipment is ready for use.

   a. Goes to control panel for x-ray generator and checks that indicator light shows that machine is "warmed up," or turns on main switch as appropriate to equipment and allows time for machine to "warm up." If appropriate, performer may set radiography or tomography mode selector and set collimator control for manual operation.

   b. Performer sets x-ray table in horizontal position. If appropriate, such as with wide angle hypocycloidal tomography, performer may insert additional filter (as designated) into beam column. If institution has polytomography unit, sets mode corresponding to appropriate tube-film travel pattern and sets up as appropriate to mode selected.

   c. Makes sure that tomography power switch is off (if appropriate).

   d. If a tomography attachment is to be put in place (to be used with conventional tubemount, generator, and horizontal bucky x-ray table), performer obtains the necessary equipment and assembles:

      i) Checks that table is in horizontal position.
      ii) Attaches fulcrum assembly along the table top rail at head end of table and secures.
      iii) Attaches fulcrum assembly plug to appropriate electrical receptacle.
      iv) Attaches the fulcrum bar and bucky link bar as appropriate to equipment and moves the tubemount over the fulcrum assembly. Adjusts so that angulation and fulcrum level indicators are facing appropriately.
      v) Slides fulcrum bar into fulcrum assembly as appropriate and locks.
      vi) Adjusts tubemount to prescribed test focal-film distance.
      vii) If vertical tomography will be tested makes sure that fulcrum bar is released and moves table into vertical position.
      viii) Moves the tomographic mechanism manually through the maximum travel and checks that there are no restrictions such as from cables or other attachments. Adjusts as appropriate.
      ix) Engages the drive mechanism for horizontal or vertical travel as appropriate and removes engaging rod. Sets lock switch if appropriate to prevent alternative travel motion.

   e. Inspects unit visually for obvious mechanical defects.

3. Performer may check operation of the unit by making test run or may com-

TASK DESCRIPTION SHEET (continued)

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List Elements Fully

List Elements Fully

bine with another radiographic test such as any described below.

a. Performer selects the appropriate cassette size, with film and screen speeds appropriate to the equipment and the test.

   i) Attaches identification information to the cassette or table top using radiopaque marker.
   ii) Includes marker giving the level at which the fulcrum will be set for the given test exposure.
   iii) Places cassette into bucky tray as appropriate.

b. Performer sets up for test using predetermined settings appropriate for the test.

   i) Sets the fulcrum (layer height) level for the test exposure. If an automatic layer height selector is available, performer sets the controls to the interval distances selected, and sets the fulcrum for the uppermost or lowermost test level desired, depending on the direction of the automatic change. Sets the fulcrum level using hand crank or power switch and checks the setting on the fulcrum (layer height) indicator.
   ii) Sets the amplitude (sweep). Makes sure that x-ray tube is centered at zero angle. Checks focal-film distance. Sets the test exposure angle or amplitude as appropriate to equipment and checks angle on indicator.
   iii) Sets the sweep speed for the test according to the speeds available for the equipment, the exposure angle selected, and established procedure for the test. May select fastest sweep. Notes the duration or actual exposure time as the product of the angle and the sweep speed selected.
   iv) For linear tomography, sets the directional control switch to right or left for horizontal travel depending on the direction in which the tube will travel during the actual exposure.
   v) For asymmetrical exposure, determines whether the arc to be used will be at the beginning of tube travel or near the end, and adjusts equipment as appropriate.
   vi) For other types of tube-film travel motion performer sets the selector(s) as appropriate for direction control (if any).

c. Sets exposure factors appropriate for test:

   i) For conventional exposure control selects and sets milliamperage by choosing selectors for the correct focal spot size. Sets the test kVp by choosing the combination of major and minor kilovoltage settings to produce the desired kVp. Sets backup timer at an increment slightly longer than the actual exposure time (calculated as the product of the angle of amplitude and the sweep speed, or as listed on chart).
   ii) For automatic exposure timing control, selects and sets the controls corresponding to the type of test and use of screens, bucky, etc., and, if appropriate, focal spot size.

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Selects and sets a control corresponding to the field size (as listed on technique chart for phototiming).
May select and set a kVp range button (if called for with equipment) corresponding to range for examination.
Sets a density selector corresponding to the requirements for the test. Makes sure backup timer is not likely to terminate exposure before phototimed exposure is made and sweep is completed.

d. Places appropriate test phantom (depending on other test being carried out) on tabletop and collimates to appropriate field size.
e. Performer may test tomographic setup by proceeding with tubemount sweep but not activating exposure.

  i) Turns on power for tomographic attachment or mode. Using appropriate switch, activates tomographic sweep action without activating exposure, and holds until tubemount reaches the extreme limit of travel.
  ii) Returns tubemount to other extreme position, holding until tubemount travel is complete. Interrupts travel at any point and makes any adjustments necessary. Returns equipment to "start" position.

f. Performer may make test exposure by activating unit as appropriate.

  i) Observes whether the motion of the tube and film travel are smooth. Notes stability of x-ray tube support, fulcrum level selector, and bucky connection.

List Elements Fully

  ii) May record test exposure settings for the given amplitude; clocks travel rates and records. Compares with manufacturer's specifications. Determines whether these are acceptable and/or may decide to have further tests done.

4. If performer will test the accuracy of the fulcrum position indicator (which defines the plane of interest), may use a test phantom which contains a helix of lead numbers in a standard arrangement with standard spacing from the base or other appropriate phantom.

  a. Performer sets up for test.

    i) Places appropriate aluminum radiation absorbers on the tabletop. Uses test stand and places test phantom on test stand over the aluminum sheets.
    ii) Sets fulcrum control as appropriate to select a particular lead number level within the phantom.
    iii) Selects and sets technical factors for test and test position such as large angle, thin section "cut".

  b. Makes exposure as described above.

    i) May use another cassette and repeat for small angle or zonography (thicker "cut").
    ii) Has radiograph(s) processed or decides to do personally.

  c. Evaluates processed test films on view boxes. Notes which lead number is most clear and compares with the one that should be most clear for the fulcrum setting selected.

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List Elements Fully

i) Notes whether images of numbers above and below the plane of interest are increasingly blurred.
ii) Calculates any error distance and compares with test information on acceptable error range. Records.

5. If performer will test the resolution of the equipment, performer may use a phantom containing pieces of copper mesh in standardized sizes and tilt or other appropriate device.

   a. Sets up for test as described above, using appropriate exposure angle and fulcrum setting.
   b. Makes exposure and has test film processed.
   c. Evaluates the minimum diameter image which can be seen clearly and the length of the strip that is in sharp focus. Records.
   d. Determines whether the observed resolution compares with the manufacturer's specifications. Notes whether system meets minimum requirements for resolving fine anatomical details as stated in test standards.

6. If performer will test uniformity of exposure, may use a metal aperture plate with a central hole of appropriate diameter.

   a. Sets up for test as described with aperture plate a standard distance over tabletop.

      i) Centers to aperture.
      ii) Adjusts exposure as appropriate for line density.
      iii) Makes complete scan.
      iv) Has exposed film processed.

   b. Performer evaluates the processed film for density variation, checking that any variations are within acceptable range. For circular, elliptical, hypocycloidal or similar multidirectional scans checks for closure and overlap as specified by manufacturer.

7. If performer will check grid alignment, may check visually as appropriate or may decide to carry out test.

   a. May tape a plumb bob line to the circular end of the tube housing and suspend over the grid.

      i) Centers a liquid level on grid centerline.
      ii) Checks that the plumb bob is on the grid centerline marker when grid is level.
      iii) Activates the tomographic motion. Checks that the tube remains aligned with the grid centerline marker.

   b. Performer may decide to make radiographic test.

      i) Places radiopaque marker at center of grid on centerline marker of the grid.
      ii) Places a test object with a pin mounted on it on tabletop. Centers exactly so that light in collimator casts no shadow o the pin. Inserts test cassette.
      iii) Sets technical factors as appropriate and fulcrum level to the pin.
      iv) Makes exposure and has film processed.
      v) On processed film draws lines parallel to the film edges through the image of the center line marker of the grid.
      vi) Checks that the image of the pin appears on the centerline of the grid as drawn.

TASK DESCRIPTION SHEET (continued)

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List Elements Fully	List Elements Fully
vii) May calculate whether alignment is within acceptable range, based on grid ratio. Records. 8. Based on the test results, performer determines whether the equipment being tested meets acceptable standards, given any legislated requirements and any more rigorous local or institutional requirements. May arrange further tests. a. For new equipment, may determine whether the unit should be refused or whether service staff should be required to make adjustments or replacement. b. For existing equipment, may determine whether problem requires shut down of unit until adjustments or repairs are made. c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements. d. If performer decides that the test results indicate a major fault, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit. e. If not already done, performer marks test records and films with date; may record evaluation of results and what was done. Performer places films and records in appropriate location for filing. Returns test materials to storage or has this done. f. With tomographic attachment, disassembles by reversing the attachment procedures.	

TASK DESCRIPTION SHEET

Task Code No. 538

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Half-value layer of diagnostic overhead or fluoroscopy beam determined by reading from semi-log plot of mR exposures against added filtration using radiation detector and meter; HVL compared with standards for minimum filtration; arrangements made to adjust or replace; test recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Diagnostic x-ray, fluoroscopy units and controls; manufacturer's specifications; test design; government HVL specifications and limits; semi-log paper, ruler, pen, pencil; radiation exposure detector and meter; test stand; collimator; sheets of aluminum, filters; out-of-order sign

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; repair service personnel or installers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Estimating HVL and checking adequacy of filtration of diagnostic x-ray equipment by setting up exposure detector test equipment; making exposures at constant technical factors with increasing filtration; recording; plotting exposure against added filtration on semi-log paper; estimating HVL; comparing with acceptable limits; arranging for replacement filtration if appropriate; recording test results.

List Elements Fully

Performer determines the half-value layer (HVL) of the useful beam of a given diagnostic x-ray tube potential to check that the aluminum equivalent of the total filtration in the primary beam meets approved standards for the operating kVp of the equipment as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer determines which unit is to be checked, whether this is new installation or a replacement of parts. Notes whether unit is for diagnostic radiography and/or fluoroscopy.
   a. Obtains appropriate manufacturer's specifications on the operating voltage (kVp) and information on the usual kVp range for examinations to be performed with the unit to be checked.
   b. Obtains government standards with respect to minimum HVL in mm Al at measured kVp's for operating kVp ranges and the size increments of filtration to add to perform test, based on the highest design kVp operating range.
   c. Obtains test descriptions if available indicating the standard technical factors to use for the test such as the kVp commonly used and in the

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6. Check here if this is a master sheet..(X)

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highest kVp range of the unit, the mA and exposure time, distance from the target for placement of additional filtration, type of radiation exposure detector, distance from the target to the detector, collimated field size. Obtains sheets of aluminum of appropriate thicknesses, or plans to use dial indicators for units with dialing selectors for additional filtration.

d. Performer prepares or obtains linear semi-log paper marked so that the horizontal axis defines increasing units of added mm's of aluminum filtration from zero,and the vertical log scale defines exposure in mR's.

e. Obtains test equipment including radiation exposure detector,such as an appropriate integrating ion chamber and meter, and any test stand to be used.

f. Performer prepares the test report forms to be used, entering the date and technical factors to be used.

2. Performer sets up unit for the test of HVL. May proceed as follows:

a. In the control room, performer makes sure that indicator light shows that the x-ray generator is "warmed up" and ready for use. Makes sure that all circuits have been stabilized. If appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter.

b. As appropriate, performer sets x-ray generator mode selector(s) for overhead and/or fluoroscopic mode.

c. Performer sets the kVp selector for the highest setting to be used for the test, and sets the mA and exposure time as appropriate to the fixed values to be used at all test stations.

d. Sets the collimator for manual operation.

e. Makes sure that there is no cassette in cassette tray.

f. For fluoroscopy tube makes sure that the unit is not set to operate in the brightness control mode.

g. Moves all moveable grids, compression cones, spot film or other devices out of the path of the primary beam.

h. Checks that examination table is level.

i. Performer places the exposure detector chamber in appropriate position,centered to the image receptor and x-ray beam. May use test stand.

j. Adjusts the target to detector distance as appropriate for overhead or fluoroscopy tube.

k. Checks that there is no filtration in the beam aside from the inherent filtration of the unit.

l. If not already done, performer connects the ion chamber to the meter(so that the radiation exposure can be read in the control room if appropriate).

m. Performer collimates so that the standard field size is obtained (an area slightly larger than the detector).

3. Performer carries out tests:

a. Performer activates the overhead or fluoroscope exposure from the control room.

b. Performer records the exposure (mR) obtained as appropriate.

c. Performer adds a sheet of aluminum,in the appropriate thickness

TASK DESCRIPTION SHEET (continued)

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for the next test step, in the path of the beam at a predetermined distance from the target, or dials the appropriate added filtration thickness. Records.

d. Performer maintains all technical factors and repeats exposure. Records.

e. Continues to add filtration of the appropriate thickness, make the appropriate number of exposures, and record until maximum filtration thickness for the kVp range has been obtained.

f. Calculates exposures or exposure rates using appropriate corrections for chamber response to different x-ray energies (using chamber calibration figures or energy response data).

4. Performer plots the exposure readings on the semi-log paper, starting with the first reading at the zero point on the added filtration horizontal axis, and connects the points using a straight edge, creating the absorption curve.

5. Reads the HVL for the unit directly from the graph as follows:

   a. Notes the highest exposure. Divides in half to note the value of the exposure at half the original value.
   b. From the half value exposure level on the vertical axis, draws a line horizontally until the absorption curve is intersected. Reads the HVL by noting the value on the horizontal axis directly under the intersection point. Records.

6. Performer compares the obtained HVL with appropriate required range, and notes whether the figure is equal to or greater than the HVL criteria for the given kVp range.

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   a. If equipment is not within acceptable range, performer may repeat test, may try test at another kVp setting.
   b. When performer decides that results indicate that inherent filtration is not within acceptable limits, performer informs appropriate staff member and/or arranges to have equipment replaced or adjusted. May place out-of-order sign on unit.

7. If not already done, performer marks test records and graphs with date; may record evaluation of results and what was done. Places records in appropriate location for filing. Returns test equipment to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 539

This is page 1 of 4 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Diagnostic radiography equipment checked for bucky grid alignment and centering;alignment measured directly or determined by radiographs of phantom;centering determined by evaluation of right-left density of radiograph of phantom;accuracy calculated and compared with given acceptable limits;decision made to refuse equipment,repair;test results recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Diagnostic x-ray equipment and controls;manufacturer's specifications;test procedures,standards and forms;loaded test cassettes;radiopaque markers;test phantoms;tube rating,technique charts;carpenter's square;plumb bob line;liquid level;test tool;tape; view boxes;phone;out-of-order sign;pen;pencil;marking pen;ruler

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor;radiologist;repair service personnel or installers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking bucky grid alignment and/or centering in diagnostic radiography equipment by directly sighting and measuring;or by making test radiographs of phantom using fixed exposures or image of pin;by evaluating right-left density on image of phantom; evaluating test films and/or calculating differences from required standards;deciding,arranging for replacement or repair;recording test results.

List Elements Fully

Performer checks bucky grid alignment and centering of diagnostic x-ray equipment when informed that new equipment is to be checked or when periodically checking existing equipment as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes the equipment to be checked and the type of tests to be carried out:
   a. Notes if equipment to be tested includes standard diagnostic unit, spot film unit, automatic film changer. May obtain manufacturer's specifications. Notes the grid ratio.
   b. Notes type of test of grid alignment to be done, such as three-film fixed exposures, test tool exposure, or manual measurement, based on the type of equipment involved. Checks whether centering test will also be made.
   c. Performer obtains appropriate standard test procedures, criteria,and test forms and records. Obtains appropriate test materials such as phantom(s), test tool, cassettes loaded with appropriate size, type,speed of film and screen combinations, radiopaque markers (for identifying test films and for use in tests).

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

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List Elements Fully

- d. Reviews appropriate technical factors for the tests. Checks manufacturer's tube rating chart to be sure that the test stations will not exceed the instantaneous ratings or the total anode heat capacity for the tube.
- e. May check that unit has been tested for conventional radiographic system tests such as calibration, position of focal spot, timer accuracy. If not already done, may arrange such tests or decide to do personally.
- f. Performer makes sure that equipment is ready for use.

  - i) Goes to control panel for x-ray generator and checks that indicator light shows that machine is "warmed up," or turns on main switch as appropriate to equipment and allows time for machine to "warm up."
  - ii) If appropriate, performer may set radiography mode selector and set collimator control for manual operation.

2. If performer will make manual check of grid alignment for film changer, may obtain and use carpenter's square.

   - a. Places square against the grid centerline.
   - b. Sights along the right angle edge and measures the distance (if any) that the sighting is off from the center of the collimator face. Records.
   - c. Determines whether alignment error is within acceptable range (such as ± one half of the rated focal spot size). Records.

3. If performer will make manual check of grid alignment in standard equipment, moves tabletop out of the way by tilting or sliding away. (If this cannot be done, selects alternative test.)

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   - a. Performer tapes a plumb bob line to the circular end of the tube housing and suspends it over the grid.
   - b. Centers a liquid level on the grid centerline.
   - c. Checks that the plumb bob is on the grid centerline marker when the grid is level.
   - d. Measures any distance error and records.

4. If performer will make radiographic check of grid alignment without automatic timing using fixed exposures, makes sure unit is not in automatic mode. May proceed as follows:

   - a. Performer may disable the exposure interlock or set any automatic collimation to the manual mode.
   - b. Sets technical factors for the test and maintains these for all three exposures.
   - c. Places standard test phantom on tabletop.
   - d. Sets target-to-film distance as appropriate for test and maintains for all three exposures.
   - e. Identifies first test cassette and places in bucky tray in centered position.
   - f. Uses indicator to center tube to the center of the grid for first exposure. Collimates to phantom.
   - g. Performer makes first exposure and removes cassette.
   - h. Identifies and inserts second cassette.

     - i) Moves tube one inch off axis in one direction, at right angles to the grid lines.

TASK DESCRIPTION SHEET (continued)

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ii) Makes second exposure and removes cassette.

i. Identifies and inserts third cassette.

  i) Moves tube back to center and then one inch off axis in the opposite direction, at right angles to the grid lines.
  ii) Makes third exposure and removes cassette.

j. Has exposed films processed and examines on view boxes.

  i) Notes whether the image that was supposed to be properly centered is the most dense. Records.
  ii) If the second or third film image is most dense, records the direction of the error and plans to have unit adjusted or checked further.

5. If performer will use a test tool to check grid alignment, obtains a radiopaque marker and test tool with pin mounted on it.

  a. Tapes radiopaque marker to the center of the grid on the centerline marker of the grid.
  b. Places the test tool on tabletop. Centers exactly so that the collimator light causes no shadow of the pin. Collimates to the test tool.
  c. Sets technical factors as appropriate.

    i) Identifies and inserts loaded test cassette.
    ii) Makes exposure and has film processed.

  d. On the processed film, performer draws lines parallel to the film

List Elements Fully

edges, through the image of the centerline marker of the grid. Checks that the image of the pin appears on the centerline of the grid as drawn, without a shadow.
  e. Determines degree of error (if any). Records.

6. Performer checks on the degree of grid alignment permitted for unit (based on the grid ratio). Determines whether the unit's misalignment (if any) falls within acceptable limits. Records.

7. If performer will check bucky grid centering (to check that bucky motion is symmetric about the central axis of the x-ray tube and film) may proceed as follows:

  a. Places appropriate test phantom on tabletop. May simulate centering as for a frontal pelvic examination.

    i) Places right or left marker on phantom and a marker at the center.
    ii) Sets technical factors as indicated for test (for pelvic examination with kVp somewhat reduced). May check technique chart. May collimate as appropriate for pelvic examination.
    iii) Makes exposure and has test film processed.

  b. Performer evaluates processed film on view box.

    i) Notes whether density of image is uniform on right and left sides of radiograph.
    ii) Notes that some density difference from top to bottom is result of "heel effect."

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c. If performer notes gross right-left density differences, may repeat test after checking tube, film, phantom alignment.

d. If performer determines that right-left density differences are a result of defect, records and plans to have unit adjusted.

8. Based on the test results, performer determines whether the equipment being tested meets acceptable standards, given any legislated requirements and any more rigorous local or institutional requirements. May arrange further tests.

   a. For new equipment, may determine whether the unit should be refused or whether service staff should be required to make adjustments or replacement.
   b. For existing equipment, may determine whether problem requires shut down of unit until adjustments or repairs are made.
   c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements.
   d. If performer decides that the test results indicate a major fault, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit.
   e. If not already done, performer marks test records and films with date; may record evaluation of results and what was done. Performer places films and records in appropriate location for filing. Returns test materials to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 540

This is page 1 of 5 for this task.

1. **What is the output of this task? (Be sure this is broad enough to be repeatable.)**

Fluoroscope unit evaluated for functioning of automatic brightness control system;optical system checked for focus,resolution,distortion in fluoroscope, spot film,cine and/or video modes;test results evaluated against acceptable standards;decision made to refuse equipment,repair;test results recorded.

2. **What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)**

Diagnostic fluoroscope unit,controls;cine,spot film, video devices;film,cassette;manufacturer's specifications;tube rating,technique charts;test descriptions,records,forms,evaluation charts,criteria;aluminum plates;paired-hole penetrometer;lead plate;radiation detector and meter;support stand;mesh or slot hole phantom;beam attenuator;protective lead garments,shields;pen;pencil;phone;out-of-order sign; viewing devices

3. **Is there a recipient, respondent or co-worker involved in the task?** Yes...(X) No...( )

4. **If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.**

Supervisor;radiologist;repair service personnel or installers

5. **Name the task so that the answers to questions 1-4 are reflected. Underline essential words.**

Checking fluoroscopic automatic brightness control system and/or focus,resolution and distortion of the optical system,by setting up tests for minimum,maximum automatic and manual techniques;measuring exposure and density with full and half phantoms,with paired hole penetrometer,and with lead plate;using mesh or slot hole phantom to check focus,resolution, distortion for fluoroscope,spot film,cine,video modes;reviewing results;calculating whether unit meets acceptable standards;determining whether equipment needs replacement,repair;recording test results; arranging for repair.

List Elements Fully

Performer checks the functioning of the automatic brightness control system and/or the focus, resolution and distortion of the optical system of diagnostic fluoroscopy equipment when informed that new equipment is to be checked,or when periodically checking existing equipment as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer determines the equipment to be checked and the tests to be carried out.
    a. Notes whether the equipment involves use of variable mA with fixed kVp, variable kVp with fixed mA, or a combination that varies kVp with manual control of mA.
        i) Notes whether x-ray tube is above or below table.
        ii) Notes whether equipment includes a TV monitor or other optical viewing device.
        iii) Notes whether there is a dual-field image intensifier.
    b. Determines appropriate tests, given the nature of the equipment.
    c. Obtains standard test procedures, test standards, test forms and records, appropriate manufacturer's

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

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specifications, and test materials, such as two aluminum plates of equal composition and dimensions, penetrometer with pairs of holes with graduated diameters, lead plate, radiation detector (such as appropriate ionization chamber with meter), support stand, mesh or slot hole test phantom.

d. Performer reviews technical exposure factors for tests to be done. Checks exposure factors against the posted limits of the x-ray tube on a tube rating chart to be sure that technique does not exceed the heat capacities of the tube for the focal spot size to be used.

e. Unless remote control will be used, dons protective leaded garments such as apron and gloves. Makes sure that no one is in examination or control room. May place shielding around equipment.

f. In the control room performer makes sure that indicator light shows that x-ray generator is "warmed up" and ready for use. Makes sure that all circuits have been stabilized. If appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter.

g. As appropriate, performer sets x-ray generator mode selector(s) to fluoroscopic mode.

    i) If appropriate and not already done, performer may connect TV monitor to power outlet. Turns on monitor and checks that "ready" light is on.
    ii) If appropriate, selects the larger field size selector (if there is dual image intensifier) for the tests.

h. Removes all compression cones, removable grids, spot film carriage from the path of the primary beam.

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i. Sets test focal spot-to-table distance or image receptor-to-table distance as appropriate to test.

j. Checks that filtration meets test conditions.

2. If performer will check automatic brightness control, may proceed as follows:

    a. Performer makes control test with unit in manual exposure control position:

        i) With an under-the-table tube, performer sets the image receptor a standard distance above the tabletop. Places the support stand (height less than image receptor to tabletop distance) on tabletop. Places the two aluminum absorber plates on stand, and places penetrometer on top of aluminum plates.
        ii) With an over-the-table tube, performer sets the tube a given distance above the tabletop. Places penetrometer on tabletop and the two aluminum absorber plates on top of penetrometer. Places support stand (height less than tube to tabletop distance) on table top so that radiation detector can be placed on it at a later point in test).
        iii) Sets technical factors for test kVp, low test mA, and test time. Uses optical system to collimate to the image of the penetrometer.
        iv) Makes exposure and records which penetrometer holes are visible and which are in sharp focus.
        v) With under the table tube places radiation detector on tabletop under penetrometer. With over the table tube places radiation

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detector on support stand over penetrometer.

vi) Repeats test exposure as above, with mA doubled. Records reading (dividing as appropriate) as mR/mAs.

vii) Removes radiation detector.

b. Performer makes automatic brightness control test for unit with variable kVp and fixed mA as follows:

i) Maintains test set up. Sets the mode to automatic brightness control and mA as close to the low manual setting as possible.

ii) Makes exposure and records the kVp value showing on panel indicator. Records the penetrometer holes visible and which are in sharp focus.

iii) Places radiation detector as above. Makes exposure and records the R/min. (For 30 second exposure multiplies reading by 2.)

iv) Removes one of the aluminum plates and repeats exposure with radiation detector in place. Makes exposure and records the R/min. as above.

v) Maintains test conditions; sets mA for a high setting. Repeats penetrometer hole reading with both aluminum plates in place. Records. Repeats R/min. reading with both plates in place and with one plate removed. Records.

c. Performer makes automatic brightness control test for unit with variable mA and fixed kVp as follows:

i) Maintains test set up. Sets the mode to automatic brightness control and a given kVp (such as 80 kVp).

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ii) Makes exposure and records the mA value showing on panel indicator. Records the penetrometer holes visible and which are in sharp focus.

iii) Places radiation detector as described. Makes exposure for given test period such as 30 seconds. Records the R/min., multiplying as appropriate.

iv) Removes one of the aluminum plates and repeats exposure with radiation detector in place. Makes exposure and records the R/min. as above.

d. Performer checks the radiation limitation of the system as follows:

i) Maintains test set up. Maintains mode for automatic brightness control. Keeps radiation detector in place. Places lead plate over the aluminum plates on support stand for an under-the-table tube, and under the aluminum plates on tabletop for an over-the-table tube.

ii) Sets controls for maximum automatic factor positions (within tube rating limit). Makes 30 second exposure; and records the kVp and mA from the panel indicators, and the R/min. from the radiation detector as above.

iii) Sets controls for minimum automatic factor positions. Makes 30 second exposure; and records the kVp and mA from the panel indicators, and the R/min. from the radiation detector, as above.

iv) Sets controls for manual exposure factor control mode. Sets factors to the maximum mA and kVp settings available within limits of tube rating chart.

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Makes 30 second exposure and records mA, kVp, and R/min. as above.

v) Maintains manual mode and sets technical factors for minimum mA and kVp settings available. Makes 30 second exposure and records mA, kVp and R/min. as above.

e. Performer evaluates the results of the tests:

i) Evaluates which penetrometer holes were visible and which in sharp focus for all the conditions recorded. Notes whether the visible density remained constant, and all holes remained equally visible for all conditions. Compares the number of holes visible and in sharp focus with minimum acceptable standards and manufacturer's specification for the resolution quality of the unit , or as appropriate. Records.

ii) Evaluates the recorded radiation level under automatic control mode with both aluminum plates, and with one plate in place. Records. Checks that the radiation level with one plate removed was less than half the level with two plates, or as appropriate. Records.

iii) Checks that the radiation level at the radiation detector is appropriate for the target to detector distance at the given settings, filtration and beam attenuation. Records. Evaluates whether R/min./mA is within acceptable range. Records.

iv) For units already in use, compares the recorded kVp and/or mA values from the panels at the given settings with those recorded over time. Checks that the variation is within acceptable range. Records.

v) Evaluates radiation limitation by noting whether the R/min. recorded with the lead plate in place exceeded or did not exceed the maximum acceptable level listed as test criterion.

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3. If performer will check the focus, resolution and distortion of the optical system, may proceed as follows:

a. May obtain a mesh test phantom of copper or brass arranged in a radially symmetrical pattern, with holes of varying diameters and with each pie section calibrated and marked for a given mesh resolution, or a test phantom with a given slot hole pattern in groups of bars and circles and with chart to interpret resolution, such as for use in measuring effective focal spot size. Removes any grid from beam column if not already done.

b. Performer places the test phantom close to the face of the image amplifier system. May tape into place.

c. Performer checks the resolution of the fluoroscopic system by setting appropriate test factors and evaluating the image obtained on the optical viewing surface.

d. Performer checks the resolution of spot film device, cine device, or videotape system by loading and setting unit for appropriate mode.

i) Places a beam attenuator on tabletop.

ii) Makes spot film and/or cine exposures or activates videotape.

iii) Has film(s) processed; displays images as appropriate.

e. Performer evaluates the image resolution and focus of the test pattern on the output phosphor by comparing the values of the resolved mesh or slot holes with the acceptable listed standards for the

TASK DESCRIPTION SHEET (continued)

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system, at the center and edges of the visible image.

i) Evaluates distortion by examining the image of the large size mesh or slots.
ii) Evaluates cine, spot film(s) or videotape display similarly. For each modality, checks focus, resolution, distortion. Records.
iii) Notes any adjustments needed. Records.

4. Based on the test results, performer determines whether the equipment being tested meets acceptable standards at given legislated requirements and/or any local or institutional requirements.

   a. Determines whether new unit should be refused or whether service staff should be required to make adjustments or replacement.
   b. Determines whether problem requires shut down of unit until adjustments or repairs are made.
   c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements.
   d. If performer decides that the test results indicate a major fault, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit.
   e. If not already done, performer marks test records and any films with date; may record evaluation of results and what was done. Performer places films and records in appropriate location for filing. Returns test materials to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 541

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Rejected and accepted radiographs evaluated for possible problems of staff technical functioning, equipment failure, processing failure, radiation protection; remediation discussed; arrangements made for equipment check or repair; review recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Accepted, rejected radiographs, records, requisition sheets; view boxes; review record forms; pen, pencil

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologist; radiologic technologist; co-workers; supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Evaluating accepted and rejected radiographs to identify any technical problems with staff functioning, equipment, radiation protection by noting any technical problems on radiographs; determining possible causes; discussing remediation and/or arranging for inspection or repair of equipment; recording results.

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Performer reviews accepted and rejected radiographs and related records and requisition sheets, as part of a technical quality assurance program, periodically or sporadically, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Depending on institutional procedures, performer may obtain rejected radiographs and records on why rejected, if available, from appropriate location, or has this done.
   a. If an accepted procedure, arranges and reviews radiographs by type of reason for rejection and/or type of examination involved, and/or type of technique or equipment involved.
   b. Considers raising the issue that films may be of adequate quality for diagnostic purposes.
      1) May consider bringing to attention of proper staff member that requirements for rejecting all but films of optimal quality may be causing unneeded radiation exposure and cost.
      ii) May discuss with appropriate staff member, such as chief radiologist or chief technolo-

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gist; may plan to discuss at a departmental meeting.

c. May try to evaluate which rejects appear to be the result of patient motion, positioning error, improper selection of technique, failure of equipment, failure in processing.

d. Determines which type of reject cause(s) appear to be of serious magnitude.

   i) For patient motion failures, may consider adequacy of available immobilization devices, and/or failure of staff to use them properly. May discuss with appropriate staff member.
   ii) For failure to position properly, performer may discuss need for training of technologist staff and/or evaluation of staff, or use of more specific instructions on requisition sheets.
   iii) For improper selection of technique, may discuss with appropriate staff; may evaluate accuracy of technique charts; may consider need to calibrate equipment; may suggest evaluation of technologist functioning.
   iv) For failure of equipment or film processing, performer arranges to have appropriate tests and/or adjustments made.

2. Depending on institutional procedures, performer may obtain accepted radiographs, records, and/or requisition sheets and review, if acceptable procedure at the institution.

   a. Arranges and reviews radiographs by type of examination and/or type of equipment involved.
   b. May consider the issue that the number of exposures per examination may be in excess of those needed for diagnostic purposes. May check whether requisitions call for full set of exposures before review by radiologist (who could terminate examination as soon as diagnostic information is adequate). May discuss with appropriate staff member.
   c. Evaluates whether accepted films show evidence of incipient problems.

      i) Checks whether radiographs show static marks, contrast changes, streak marks, lack of resolution of fine structures.
      ii) Determines nature of incipient failure by comparing problems across equipment units for evidence of incipient processing failure, and for individual units for evidence of incipient failure of a particular system.
      iii) Based on possible problems, performer arranges to have equipment checked and/or repaired.

3. Depending on institutional procedures, performer may check that the accepted and rejected films show evidence of collimation to the area of interest, and effective gonadal shielding. Brings any problem to attention of appropriate staff member.

4. Performer records film analysis check, date, and what was done, depending on institutional procedures. Returns radiographs and records or has this done.

TASK DESCRIPTION SHEET

Task Code No. 542

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Darkroom and film processor monitoring program, procedures, tests, report forms designed; relevant equipment selected; procedures decided on; program presented and/or spot checked; program evaluated.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Literature on x-ray films, screens, processing and testing equipment, test procedures, density monitoring devices; pen, paper, or dictation equipment; current film and film processing test records

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologists; radiologic technologists; co-worker; service personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Designing, maintaining, evaluating darkroom and/or film processor monitoring program in diagnostic radiology, by considering equipment, accessories, types of monitoring measures, types of quality control procedures and tests, information needed, equipment alternatives; designing report forms; selecting test and/or monitoring procedures; presenting program; spot checking, evaluating current program.

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Performer designs, maintains, and/or reevaluates a quality control darkroom and films processing monitoring program for diagnostic radiography (to achieve uniform radiographic results for equal conditions and optimum quality) as a result of:

a. Regular assignment.
b. Request from supervisor or co-worker.
c. Own initiative.

1. Performer may decide or be requested to develop or evaluate a quality control program in film processing.
   a. Performer may keep abreast of new developments in processing and film manufacture and reports on research in the area, or may decide to do a literature review on request or periodically.
   b. Performer may be asked to consider a program which includes design and layout of darkroom and film processing equipment, and/or dealing with the purchase, storage, and handling of x-ray films and screens.
   c. May be asked to consider a program for day-to-day monitoring of processor performance, periodic evaluations, film processing in relation to other testing programs, and/or identification of the exposure characteristics of purchased films.

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2. Performer considers the quality control needs of the institution based on the types of processing needs, work loads and flows involved. May discuss with radiologists, radiologic technologists. May consider any or all of the following:

   a. Considers type of equipment and films involved such as overhead radiography equipment, rapid film changers, cineradiography, spot filming, tomography, cameras, mammography, xeroradiography.
   b. Considers areas to be served such as routine radiography, emergency room, operating room, bedside radiography, radiotherapy department, other locations.

      i) Considers the number of existing darkroom locations or where new locations should be placed.
      ii) Considers load requirements for manual film processing, automatic processing, Polaroid processing.

   c. Considers type, speed, sizes of x-ray films in use, whether there are or should be processors for special sizes or types of films, such as for spotfilm cameras, cine, occlusal films, dosimetry.

3. Performer may design darkroom, film storage and processing layout, or evaluate existing layout with respect to the following:

   a. Type of radiography work to be serviced by film processing. Representative work loads. Location of examination areas.
   b. Type of film storage requirements to protect the type of films, equipment and film processing chemicals to be used or in use.

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      i) Considers conditions required for proper processing and testing.
      ii) Considers light, temperature, humidity, ventilation needs, size of storage and work areas in relation to work loads and work requirements.

   c. May recommend the type(s) of film processing unit(s) and quantities, type of test equipment, type of films and screens to purchase.
   d. May recommend new installations and room layouts or suggest changes.
   e. May consider and recommend equipment to identify films, such as lead markers, flasher, marking pens.
   f. Considers equipment for film and screen storage.
   g. May write recommendations as a report, and/or discuss with staff person in charge.

4. Performer may select appropriate monitoring checks, periodic testing, and what information to collect for monitoring program for film processors and for x-ray films in storage.

   a. May include check on chemical solutions, replenishment program and checks, contamination checks.
   b. May include program to monitor water and chemical solution temperatures.
   c. May include calibrated check of processed film density, plotting of variations over time at standard exposures.
   d. May include tests of film exposure characteristics.
   e. May include the daily steps to be taken to ensure optimum processing conditions.
   f. In making selections, considers what periodic tests will find incipient problems before major ones

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require repeat of examinations and additional exposure of patients.

g. Selects types of equipment for testing program such as sensitometer or use of radioactive source, photosensitometer or x-ray machine to obtain standard film exposures.

h. Notes the acceptable range criteria within which test results will be allowed to vary. May refer to predetermined or legislated standards.

i. Considers manufacturers' recommendations or specifications, the time, staff and funds available for the program.

j. May consider the appropriate staff level or positions from which personnel should be selected to carry out monitoring and/or testing and record keeping.

k. Performer may select the type of records to be kept and design the report forms.

5. If there is an ongoing film processor monitoring program, may evaluate it in the light of existing records, recent technological developments, new legislation, or scientific evidence on need for revised standards. As appropriate, reviews the elements of the program as described above.

6. Depending on whether it is requested or appropriate, performer may prepare, write out, or dictate a report presenting the monitoring program.

   a. May refer to the cost of the program in relation to available alternatives, and benefits in terms of minimized unnecessary patient exposure, increased efficiency. May refer to existing literature.
   b. Performer presents and/or discusses proposed program as appropriate in response to assignment, or request, or on own initiative.

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   c. Performer may prepare and bring in alternative proposals as requested, answer questions on program as appropriate.

7. At any point during a current program or after the program is approved, performer may participate in developing, running, and maintaining the program.

   a. May arrange to have approved equipment purchased, calibrated and/or installed.
   b. May arrange to make preliminary tests and report results.
   c. May decide on or suggest the procedures for carrying out the monitoring procedures and tests given the equipment involved and the records to be kept.

      i) May write out and/or discuss the steps involved.
      ii) May arrange to teach the procedures.

   d. May arrange to have maintenance staff and/or outside service personnel available to make needed adjustments as a result of tests.
   e. During the course of the program, performer may arrange to spot check how procedures are being carried out, whether they are being done accurately, whether records are being kept appropriately.

TASK DESCRIPTION SHEET

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This is page 1 of 4 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Film processing equipment tested for uniformity of function; test films exposed by sensitometer or radioactive source; films processed; density, and water and developer temperatures measured, recorded, and/or plotted; variations evaluated; incipient problems noted; corrective action decided; monitoring recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

X-ray film processor(s); manufacturers' specifications; sensitometer or radioactive source; densitometer; thermometer; test x-ray films; film markers; test descriptions, forms, charts; pen; pencil; out-or-order sign; phone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologic technologist; radiologist; co-worker; service personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Monitoring and evaluating x-ray film processors by exposing test films with sensitometer or radioactive source; processing films; measuring density, fog with densitometer; recording inlet and wash water and developer temperatures; calculating, plotting variations over time; determining if intra- and inter-processor variations are within acceptable range; arranging for adjustment or repair; recording.

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Performer runs test of film processing equipment as part of a monitoring program daily, periodically, or when appropriate as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes which film processor(s) are to be tested.
   a. Notes whether a sensitometer or a radioactive source will be used with a densitometer.
   b. Obtains appropriate information on test procedures, prior records and test criteria, charts, manufacturers' specifications as appropriate.
   c. May check that the test is being done at the appropriate time of the day if uniform time is part of test conditions.

2. Performer goes to the appropriate location(s) for testing processors and assembles test materials as appropriate.
   a. Performer may go to darkroom(s) connected to processor(s).
      i) Does not enter darkroom while red light is on; if open, knocks to make sure that room is empty or can be entered.

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- ii) Makes sure that no unexposed film is in the open before turning on lights other than safelight.
- iii) Performer tells anyone working in darkroom to stop feeding film into the machine(s), or asks co-worker to do so.
- iv) Makes sure hands are clean, dry.

b. Makes sure that the processor(s) are clean and properly prepared for use, or has this done, unless test is to be made on processor(s) as encountered to determine unusual operating conditions.

c. Makes sure that thermometers to be used to record temperatures have been checked for accuracy.

d. Checks that densitometer has had its appropriate calibration check.

e. If sensitometer will be used, makes sure that it is the same one used for previous tests and has been calibrated.

f. Checks box of x-ray film set aside for test. Notes how many films are left. Notes emulsion number. Makes sure box is at room temperature.

- i) If only a few unexposed films are left, and/or if films from a different emulsion batch are to be used, obtains new batch of test films.
- ii) Arranges films from older batch and fresh batch so that there will be overlap for several test runs. Plans duplication of test steps so that continuity can be established and any significant differences in emulsion sensitivity caught and noted.

g. Performer prepares record forms as appropriate for the test.

3. If performer will use a radioactive (gamma ray) source for the exposure, may prepare test film to receive a standard exposure from the source, following proper radiation protection procedures. Otherwise prepares test films for sensitometer light exposure (to produce intensity and quality of radiographic screen output) using appropriate sensitometric step tablet.

a. Performer sets up film(s) so that a given predetermined area of each film will be exposed for a uniform time and intensity.

- i) May prepare identification for film indicating date, emulsion number or test batch number, and the processor being tested, as appropriate.
- ii) With radioactive source, sets up for test time as appropriate.
- iii) For sensitometer, turns lamp control knob to "on" position, and adjusts ammeter reading to appropriate calibrated value.
- iv) Positions each film as appropriate. For sensitometry, turns off all lights except safelights suitable for the film being used. Follows manufacturer's instructions for use.

b. Makes each exposure as appropriate.

- i) With sensitometer, may repeat exposure on other side of film (double emulsion coated film).
- ii) Repeats with film from second batch if double tests are being made for overlap of test film batches.
- iii) Repeats exposure with additional test films so that there are exposed films for testing each processor being monitored.

c. Performer inserts the exposed film(s) into the appropriate pro-

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cessor with the appropriate exposed edge (light end) going in first; feeds into processor in standard position.

- i) May check time elapse from insertion to completion.
- ii) Obtains processed film(s) from output end of processor(s).

d. Performer records the density of the exposed, processed film for each processor, using a densitometer.

- i) For film exposed with sensitometer, reads the grey steps and clear area of image. Notes the step used to record density in all tests (such as the step just below one density unit) and records as density. Reads the clear area and records as "base plus fog."
- ii) For film exposed with radioactive source, records optical density of the exposed area of the processed film as density, and unexposed area as "base plus fog."

e. Records other variables for each processor:

- i) Records the water temperature on the thermometer attached to the water regulator.
- ii) Opens processor and uses thermometer to measure and record temperature of developer solution. Cleans thermometer; measures and records temperature of wash water.
- iii) Records time of test, time used in processing stage.

4. Performer records and charts density information for each processor:

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a. For each processor performer enters readings of average density on time chart so that variations over time can be evaluated. May enter lower contrast, speed, maximum contrast, and base plus fog readings at different chart locations.

b. Performer may note differences in density between overlap test films. If so, records differences as due to differences in emulsion sensitivity. May calculate and use adjustment factor.

5. Performer calculates averages and variations from the average of temperatures of inlet water, developer and wash water as well as density.

a. Determines whether variations are within acceptable range (about the average and/or about manufacturer's recommended values). Calculates wash water temperature variations within range of developer temperature.

b. Determines whether density variations and fog level variations are within acceptable range.

c. Performer compares results across processors. Checks that inter-processor results are within acceptable range.

6. Performer evaluates whether test results indicate malfunction of processing components, errors in temperature, or need to replenish processing chemicals.

a. May evaluate whether random variations of density and fog indicate light leaks.

b. For variations in temperature, performer may check water filters. May arrange to adjust thermostats. For temperature surges may arrange

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for pressure regulators, valves, reserve tanks to be used. c. Performer may decide to make adjustment in replenishment rates or may order emptying, cleaning and recharging of processor. d. Performer may decide to institute or suggest more careful set-up and check procedures on the part of staff in checking temperature and replenishing chemicals. May discuss with appropriate radiologic technologist or other staff member. e. Determines whether problem requires shut down of processor unit until adjustments or repairs are made. f. If performer decides that the test results indicate a major component fault, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit. g. If not already done, performer records evaluation of results and what was done. Performer places records in appropriate location for filing. Returns test materials to storage or has this done.	

TASK DESCRIPTION SHEET

Task Code No. 544

This is page 1 of 4 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

X-ray film exposure characteristics obtained from sensitometer or x-ray exposure, processing, and densitometer; characteristic curve(s) evaluated; uses for film batch or rejection suggested; relative speed, contrast of screen-film combinations evaluated; test results recorded.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Sensitometer and step tablet or diagnostic x-ray machine and penetrometer; film processor; densitometer; x-ray or dosimetric film batch and samples; film holders or screens and cassettes; radiopaque markers; film manufacturer's specifications; test descriptions, forms, charts; pen, pencil; ruler; log table or calculator; phone

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. **If "Yes" to q. 3:** Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologist; supervisor; co-worker; radiologic technologist; film manufacturer's representative

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Determining exposure characteristics of x-ray and/or dosimetric films by obtaining film samples; setting up for and making test exposure using sensitometer and step tablet or x-ray unit and penetrometer; having films processed; reading and recording densities using densitometer; averaging figures; plotting net optical density against log exposure or aluminum thickness; examining characteristic curves; evaluating relative speed or contrast of screen-film or nonscreen films; determining acceptability of questionable film batch or determining appropriate uses for new film types or outdated films; recording.

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Performer checks the exposure characteristics of diagnostic or dosimetric x-ray film when the relative speed and contrast of new film types or screen-film combinations are to be evaluated, when a new shipment of radiographic film and chemistry is in doubt (such as when damage is suspected) or when outdated film is to be reevaluated, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes the purpose of the test, reviews the type of test and equipment appropriate, and obtains all the necessary materials.
   a. If a new film type is to be evaluated, notes the suggested uses, the proposed cassette, screen-film combinations for diagnostic film, the anticipated exposure range, and the spectral character of any intensifying screens to be used with the film.
   b. Notes the type of emulsion involved. Notes the manufacturer's description of the films' exposure characteristics and speed.
   c. Notes whether test will be made with sensitometer and step tablet (if the sensitometer will provide light that is the same spectral character as the light from any intensifying

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screen involved, such as calcium tungstate screens), or whether a standard x-ray source and penetrometer will be used with the consideration that the results will be applicable only for the screens, kVp, geometry and generator involved.

d. Obtains appropriate information on test procedures, materials for plotting the characteristic curves, calculating averages. Notes the test stations and other test conditions necessary. Obtains prior records, test criteria, charts, as appropriate.

2. Performer goes to appropriate location to set up for test procedures.

a. If performer is to work in darkroom, enters taking proper precautions. Makes sure that hands are clean and dry. Makes sure that no unexposed film is in the open before turning on lights other than safelight.

b. If making comparisons with known films, such as to check suspected batch, to evaluate outdated films or film-screen combination, checks box of known films set aside for tests. Checks emulsion number. Makes sure that box is at room temperature.

c. Selects a random sample of films from the batch(es) to be tested as appropriate. Records emulsion number. Identifies films by batch as appropriate. Arranges films for comparison so that the test conditions can be exactly duplicated. For calibration of personnel monitoring films, selects test films and control film from the batch to be used in badges. Notes and records emulsion number.

d. If a radiographic source will be used, performer notes the designated x-ray unit and generator.

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i) Loads appropriate cassettes with designated screen type(s). For comparison purposes may plan to expose one known and one unknown film simultaneously by placing penetrometer so that it rests on the two cassettes, or loads so that a cassette contains a half sheet of each film in designated location.

ii) Obtains an appropriate aluminum step wedge with an identifying marker (such as a hole drilled half-way through a center step), and orientation directions to place the step wedge in a constant anode-cathode orientation for each exposure, and a center mark for positioning the collimator cross-hairs.

e. If a sensitometer is to be used, sets up films so that a sheet of film to be checked and a sheet of known film can be exposed in sensitometer under exactly the same conditions.

i) Checks that the sensitometric step tablet is ready for use.

ii) Makes sure that sensitometer has been calibrated and is the same one used for previous tests.

f. Checks that the densitometer to be used has been appropriately calibrated. Turns on power and allows time for unit to warm up.

g. Checks that the designated film processor to be used has been tested that day for processing consistency or decides to do personally. Makes sure that developer, wash and cooling water are at appropriate temperatures, and that timer is set as appropriate.

h. If radiographic exposures will be made, checks that the x-ray unit

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has been calibrated for known exposures at the technical factors, distance(s) and field size(s) to be used for the test. Enters control room for designated machine. Checks to see that indicator light shows that x-ray machine is ready for use. Makes sure that it is warmed up and that all circuits have been stabilized. Checks line voltage meter and, if required, turns compensator dial until needle is aligned properly on line meter. Checks that appropriate standard filtration for the test is present.

i. Performer prepares record forms as appropriate for the test.

3. For sensitometer testing, performer follows manufacturer's instructions for use. Exposes samples from each film batch to be tested using sensitometric step tablet. For dual emulsion films may expose each side.

4. For radiographic source testing with penetrometer, may proceed as follows:

    a. Sets technical factors as appropriate for test with a fixed mA, kVp and time as predetermined.

    b. Places cassette or pair of cassettes on examination table. Places penetrometer on cassette or centers lengthwise across two cassettes.

        i) Orients penetrometer to anode-cathode directions as indicated.

        ii) Collimates using light system to allow about an inch of film to be exposed around the entire step wedge.

        iii) Adjusts distance to the predetermined target-film distance and centers beam to the designated center of penetrometer using cross-hair shadows.

        iv) Places markers to identify batch, date, technical factors used and

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other information next to penetrometer in area to be exposed (but not in the area of greatest density at thinnest end of step wedge).

    c. Makes exposure. Repeats exactly for other films in sample for each screen-film combination, pair of films or sample from batch to be evaluated. Waits appropriate amount of time between each exposure.

5. Performer has the exposed films processed at once or decides to do personally. Makes sure each film is fed into the processor in the same light-to-dark orientation and at the same location on the processor feed shelf.

6. Performer obtains the processed films and records optical density using densitometer:

    a. Records densities for each sample for each film type:

        i) Reads the density in various unexposed areas of the film. Averages and records as the base-plus-fog level (background density).

        ii) Reads the density for each designated step on the wedge image and records. Records density in the exposed area just below the thin end of step wedge as maximum density.

        iii) Averages the obtained densities across the samples for each film type. Records.

        iv) Subtracts the base-plus-fog density from the other recorded densities to obtain the net density for each wedge step.

        v) Records net density for each step next to its log exposure (or next to the thickness of the penetrom-

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eter steps in inches of aluminum).

b. Plots the optical density obtained for each film type against the log of the exposures represented by sensitometer grey areas to obtain the characteristic curve (Hurter-Driffield curve) or against the aluminum thickness to obtain an analog of the HD curve.

7. Performer evaluates the resulting shape of the characteristic curve for a new film type, or compares the curves for comparisons of film-screen combinations, comparisons of known and questioned film samples, and evaluation of outdated films:

   a. Performer may determine the relative speed and contrast of films to be compared. Measures the speed point as appropriate for the comparisons. Compares exposure or thickness difference between the two points under comparison as indication of speed difference between two film types. May calculate correction factor for use in changing mAs when a new, higher speed film or screen-film combination is to be used. Records.
   b. May determine relative contrast by calculating as appropriate. Records.
   c. May examine shape of the characteristic curves and record key parameters such as lower (curve) contrast, speed, maximum density and maximum contrast using appropriate formulas and chart, referring to densities on the straight-line portion of the curve(s) as appropriate.

      i) Compares the base-plus-fog and other key densities of known and suspect film and notes whether the values differ beyond acceptable range.

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      ii) If extreme differences are obtained, rechecks whether the film types are the same and thus comparable.

   d. May evaluate from the films whether density appears uniform in the exposed field. Checks for irregularities.
   e. May compare the information obtained about the film with the manufacturer's specifications, taking into account possible variations in exposure and processing conditions.
   f. For acceptance testing may determine whether the batch of films should be set aside or returned to the manufacturer because of nonconformity with specifications. Records. Indicates this to appropriate staff member or calls manufacturer and reports problem.
   g. May designate appropriate range of radiographic uses based on exposure characteristics needed for specific types of examinations or equipment. Records.
   h. May suggest a change in the uses to which outdated films should be put. Records.
   i. May discuss results with appropriate staff member(s) and make suggestions.
   j. If appropriate, records whether personnel monitoring films can be used in film badges.
   k. If not already done, performer records results, evaluation, and what was done. Places films and records in appropriate location for filing. Returns test materials or has this done.

TASK DESCRIPTION SHEET

Task Code No. 545

This is page 1 of 4 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Patient exposure rates for standard diagnostic radiography examinations monitored, posted; results evaluated against acceptable standards; decision made to test equipment, suggest changes in collimation, procedures, or gonadal shielding; monitoring results recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Diagnostic fluoroscope or x-ray unit, controls; cine, spotfilm, tomography devices; dosimetric film; TLD packets; manufacturer's specifications; tube rating, technique charts; monitoring descriptions, records, forms; exposure rate charts; patient equivalent phantom; ion chamber radiation detector and meter; protective lead garments, shields; pen; pencil; out-of-order sign; phone; cassettes; gonadal shields

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; radiologist; repair service personnel; radiologic technologist

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Monitoring patient exposure rates for routine diagnostic x-ray procedures by setting up exposure detector(s); simulating and recording exposure for routine examination conditions; reviewing results; evaluating whether examination exposure is acceptable or can be reduced; determining whether equipment needs testing, shut down; posting exposure rates for examinations; recording monitoring results; recommending gonadal shielding.

List Elements Fully

Performer monitors and/or posts representative patient exposure rates for routine diagnostic procedures periodically, or when new equipment is installed, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes type of unit for which patient exposure rates for specific examinations and/or modes are to be monitored and/or posted.
    a. Obtains monitoring descriptions, forms, records of past patient exposure rates for given examinations with the unit. Obtains manufacturer's specifications.
    b. Checks that unit has been tested for conventional radiographic system checks such as calibration, maximum entrance exposure rates, timer accuracy. If not already done, may arrange such tests or decide to do personally.
2. To monitor and record the patient exposure rates for routine procedures (to make it possible for radiologists and technologists to consider the patient exposure and/or record the estimated patient exposure associated with given standard examinations in patient records), performer may proceed as follows:

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6. Check here if this is a master sheet..(X)

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a. Notes the standard examination(s) for which patient exposure will be monitored, including standard patient positions and areas of interest.

   i) Notes type of modality to be monitored, such as overhead radiography, rapid film changer, fluoroscopy, cineradiography, spot filming, tomography, and/or computerized transverse axial tomography.
   ii) Notes the accessories used for given examinations, such as image intensifiers, automatic brightness controls, use of grid, use of bucky, use of image intensifying screens, the size, type, and speed of x-ray film used for spotfilms or overhead films.
   iii) Notes the related standard requirements, such as use of added filtration, extension cones, collimated field size, target-to-film distance or target-to-image distance (TFD or TID). May consider target-to-skin distance (TSD).
   iv) Considers the standard technical factors used, covering kVp, mA and exposure time for given patient thicknesses, field sizes, TFD, and projections. May check technique charts.

b. Notes type of monitoring to be done, such as use of patient equivalent phantom, transmission ionization chamber for whole body area exposure product (R cm^2); or integrating ionization chamber, or film dosimetry or thermoluminescent dosimetry (TLD) for selected body areas such as center of field, gonads. Notes whether gonadal shield types will be tested.

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   i) May check charts showing exposure rates already recorded for the examinations being monitored at given technical factors and field sizes.
   ii) Obtains the appropriate dosimetric materials.

c. Sets up to simulate the given examination in the mode to be tested:

   i) In the control room performer makes sure that indicator light shows that x-ray generator is "warmed up" and ready for use. Makes sure that all circuits have been stabilized. If appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter.
   ii) Sets mode selector(s) for appropriate examination mode such as radiography, serial film changer, fluoroscopy, cineradiography, spot filming, tomography, computerized transverse axial tomography.
   iii) Sets special options appropriate for modality such as automatic brightness control, manual adjustment of collimators, selection of level of interest and size of "slice" for tomography. Selects appropriate field size selector for dual image intensifier.
   iv) For fluoroscopic equipment without remote controls, dons protective leaded rubber garments such as apron and gloves. Makes sure that no one is in examination room or control room. May place

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shielding around equipment.

v) If appropriate and not already done, may connect TV monitor to power outlet. Turns on monitor and checks that "ready" light is on.

vi) For modalities with positive beam limitation, may insert empty cassette in bucky tray.

d. Depending on how the monitoring will be done, performer may place a phantom simulating tissue equivalences (as in a real patient for various organs) on the tabletop to simulate the first view to be obtained for the examination (such as AP projection).

e. Performer attaches the exposure detection device as appropriate:

i) For exposure area product ($R\ cm^2$), may attach an area exposure meter distal to the diaphragm of the x-ray tube, with meter set to read the area exposure at the tabletop. May set up meter to be read in control room with "Roentgen-Area-Products" visible on meter.

ii) For integrating ionization chamber dosimetry, performer places ion chamber at the entrance surface of the phantom at the center of the field (area of interest) for the examination. May place additional chamber at the tissue equivalent level of the gonads or under gonadal shield. Sets up meter to read exposure figures.

iii) For film or thermoluminescent dosimetry, attaches TLD or film packets to the phantom in the areas to be monitored, as above. May attach radiopaque marker identifying date, location and unit to film or TLD packet.

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f. Performer sets technical factors as appropriate for examination and the simulated patient thickness according to institutional standards. May consult technique chart for unit, noting the projection, examination, area of interest, and whether a contrast medium is assumed.

i) Sets TFD, OFD for the examination as appropriate, depending on the equipment and modality involved.

ii) Sets program for spot filming, serial filming, or cine if appropriate for examination.

iii) Adjusts position of x-ray tube, image receptor, and sets collimator as appropriate for the examination. May plan to vary collimated field size to show effect on patient exposure.

iv) Records all the test conditions and options selected for each exposure.

g. Performer activates exposure for serial filming, spot filming, tomography or overhead radiography, or activates fluoroscopic exposure and/or cine for the given examination for the time period generally used.

h. For ion chamber dosimetry, records area or point exposure from meter. For dosimetric film or TLD packet, has film or TLD ribbon processed, exposure read from densitometer, or decides to do personally. Records patient area or point exposure.

i. If not already done, performer prepares chart giving the

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examination, technical factors, simulated patient size, distances, collimated field size, use of accessories and mode for the examination. Includes total fluoroscopy time. Enters the exposure area product and/or the total exposure to the center of the area of interest, and/or to the gonads, as appropriate.

j. Performer may repeat test for other modes available with equipment, for other collimated field sizes, for other types of examinations, based on the monitoring program. May repeat monitoring with and without gonadal shielding; may repeat test using a variety of gonadal shields.

k. Performer may compare current exposure readings with records already on file.

  i) Notes any changes. If so plans to investigate reasons.
  ii) May decide to have machine(s) calibrated.
  iii) May discuss implications of reduced collimation, of exposure levels with appropriate staff member.

3. Based on the monitoring results, performer determines whether the procedures being tested meet acceptable exposure standards given general or institutional requirements.

a. May use evaluation standards or prepared evaluation sheet to recommend gonadal shielding appropriate for particular examination and positioning. Considers results of test to determine dose reduction. Considers comfort of gonadal shield types, ease of positioning, time required for use, ease of cleaning and cost. Records selection and reasons.

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b. May determine that unit is showing questionable readings and decide to have it tested.

c. Determines whether problem requires shut down of unit until tests or repairs are made. May place out-of-order sign on unit.

d. Performer may discuss results of monitoring with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, safety requirements.

e. If not already done, performer marks monitoring records and any films with date; may record evaluation of results and what was done.

  i) Places films and records in appropriate location for filming.
  ii) Returns monitoring materials to storage or has this done.
  iii) May post charts giving estimated patient exposure for standard examination conditions in examination or control room(s) so these can be entered in patient records or be considered by radiologists or radiologic technologists. May post recommended gonadal shielding.
  iv) May post federal or state standards.

TASK DESCRIPTION SHEET

Task Code No. 546

This is page 1 of 8 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Radiation protection and monitoring program, procedures, report forms selected or designed; monitoring equipment selected; procedures decided on; program presented and/or spot checked; program evaluated.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Legislation, literature, manufacturers' specifications on radiation protection, radiation monitoring, shielding, instrumentation; records of existing radiation protection programs; pen, paper; calculation materials

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(x) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologists; radiologic technologists; co-worker; manufacturer's and in-house service personnel; architect

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Designing, maintaining,evaluating radiation protection and monitoring programs in diagnostic radiology by considering equipment,institutional work requirements,current literature and legislation;developing programs to decide on structural shielding, equipment,deployment of equipment,personnel,to survey radiation rates in installation,to check on use of safe practices and shielding,to monitor personnel exposure,to calibrate test instruments;designing report forms; selecting test and/or monitoring procedures; presenting program; spot checking; evaluating current programs.

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Performer designs, maintains, and/or reevaluates a radiation protection and monitoring program for a diagnostic radiology department (to provide protection for staff and patients from unnecessary radiation and to monitor personnel exposure) as a result of:

a. Regular assignment.
b. Request from supervisor or co-worker.
c. Own initiative.

1. Performer may decide or be requested to develop or evaluate a program to make sure institution is in compliance with Federal or local legislated safety requirements, or more rigorous institutional objectives in any or all of the following:

    a. Selection and/or design of structural installations, shielding and/or layout, purchase and/or deployment of new or existing equipment in relation to building design, work needs and work loads.
    b. Monitoring program for new or existing equipment and installations to measure leakage and scatter radiation from primary and secondary barriers.
    c. Recommendations and monitoring of the deployment of staff in examination procedures, and other staff practices in the light of leakage and scatter

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6. Check here if this is a master sheet..(X)

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characteristics of equipment for maximum patient and staff safety.

- d. Recommendations and monitoring program in the use of patient and/or staff shielding devices and safe practices.
- e. Monitoring and report program for personnel radiation exposure, including choice of radiation detection devices.
- f. Calibration program for monitoring instruments.

2. Performer may keep abreast of new developments in the field and reports on research in the area, or may decide to do a literature review on request or periodically.

3. If performer will develop, administer, or evaluate a program to design and/or select structural installations, shielding, and/or layout, purchase and/or deployment of new or existing diagnostic equipment, may proceed as follows:

   a. Performer gathers the basic types of information that will regularly have to be used to recommend and design shielding for diagnostic installations.

      i) May obtain current legal requirements and/or more rigorous local standards on acceptable primary and secondary barriers and acceptable levels of stray radiation.
      ii) Obtains documents giving the layout of the existing or planned facility, such as blueprints. Includes surrounding proposed or existing installations and structures, existing and/or proposed uses.
      iii) Obtains material on the exposure characteristics of all existing or proposed diagnostic x-ray equipment. May obtain manufacturer's specifications.

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      iv) May obtain documents giving guidance on estimating workloads, possible beam directions, usual occupancies in and around diagnostic installations.
      v) Obtains information on the materials available for radiation shielding, equivalency tables for the attenuation properties of various materials.
      vi) Obtains the appropriate formulas, transmission curve charts for calculating required barrier thicknesses of various materials.
      vii) May obtain cost tables related to various types of shielding and shielding materials.

   b. Lists the parameters and variables which determine the thickness of the primary and/or secondary barriers necessary to reduce the x-ray exposure rate to a given level.
   c. Lists the procedures to compute the required primary barrier thickness for any set of parameters.
   d. Lists the procedures for determining the required thickness of the secondary structural barriers.

      i) Lists the procedures to compute the required thickness of secondary structural barrier to attenuate scattered radiation to the required degree.
      ii) Lists the procedures to compute the required thickness of the structural barrier to attenuate leakage radiation to the required degree.
      iii) Lists the procedure to compare the required barrier thicknesses for leakage and scattered radiation under various ratios

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of the two, and come up with the required total secondary barrier thickness for each plane of interest, such as each wall, floor and ceiling.

  iv) Lists the procedure to evaluate the additional shielding thickness needed where existing structures form part of the secondary barrier.
  v) May list procedure for evaluating alternative shielding methods and materials in terms of cost considerations and flexibility.

e. Performer may design a program relating the required primary and secondary barrier requirements to an initial and/or periodic check of primary beam attenuation and survey of leakage and scattered radiation.

  i) May design forms which select the points at which the structures will be surveyed in their function as primary and/or secondary barriers.
  ii) May design forms in which the acceptable radiation levels are listed for each point at which radiation will be monitored and evaluated.
  iii) May design forms relating records from personnel radiation monitoring program to periodic check of adequacy of structural shielding.

f. Performer may design a checklist to help evaluate existing or proposed diagnostic equipment in terms of the protective barriers required and/or appropriate deployment in existing or proposed work areas.

g. Performer may evaluate an existing program by reviewing records from

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radiation protection surveys of the installation, personnel radiation exposure records, and/or reviewing the design of the existing program.

  i) Considers whether recorded radiation levels are within acceptable limits.
  ii) Evaluates whether all factors, variables and considerations are being taken into account.
  iii) Considers program in the light of any recent technological developments, new legislation, or scientific evidence of need for revised safety standards. As appropriate, reviews the elements of the program as described above.
  iv) If appropriate, designs a new program as described above and/or plans corrective action to redress any obvious faults in the protection program.

4. If performer will develop, administer, or evaluate a program to monitor entrance exposure rates, primary and secondary barrier transmitted rates, leakage and scattered radiation, may proceed as follows:

  a. Obtains information on existing legislated and/or local standards for permissible levels of entrance exposure rates, primary and secondary barrier transmitted leakage and scattered radiation.
  b. May refer to radiation survey data produced in relation to the installation characteristics data described above; may design program detailing survey frequency, the location at which radiation monitoring will be done, the types of tests to be carried out, the test equipment

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to be used, the data to be collected, and the limits up to which results will be considered acceptable.

c. Determines what steps will be taken for new equipment and what steps done in a periodic survey program.

   i) Determines what test of leakage radiation from the diagnostic source assembly, including tube head and collimator leakage, will be done.
   ii) May determine location for scattered radiation tests such as operator's position behind the protective barrier, at the entrance to the room, at the edge of the protective barrier, near the anticipated location of the patient, around the vertical axis of rotation of the machine. For fluoroscopy, may include scatter through bucky slot, at foot of table, at operator's position at side of table, at staff locations such as nursing stations, through protective drape, without drape. May design a survey for new installations to determine points of high scatter unique to the particular type of equipment.
   iii) May design a procedure to measure and prepare isodose curves for a new installation for use in selecting regular points for survey and deployment of staff.
   iv) May design program to survey transmission through walls, floors, ceilings, especially where the primary beam may be directed such as in across table projections, use with upright cassette holders.
   v) May include test of the protection equivalence of the viewing system window with the control booth's shielding qualities.

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d. In designing the survey, performer considers the types of equipment to be dealt with, such as overhead radiography equipment, fluoroscopy, cineradiography, spot filming, tomography, computerized transverse axial tomography.

   i) Considers the types of examinations, patient and tube positions involved.
   ii) Takes into account all normal conditions of use of equipment, worst conditions of exposure.
   iii) If not already done, performer takes into consideration the workload, use factor, occupancy rate in relation to maximum permissible dose equivalents.
   iv) May use above information to determine maximum permissible transmission levels to reflect institutional standards.
   v) Determines acceptable range criteria within which test results will be allowed to vary. May refer to predetermined or legislated standards.

e. Selects appropriate test materials such as phantom, radiation detectors.

   i) Considers the limitations of available test equipment and diagnostic equipment with respect to energy dependence, intensity range, margins of error under test conditions, and response time limitations.
   ii) Considers calibration of test or monitoring equipment.

f. May design the survey report form, provide a check list for possible

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corrective measures. May obtain a floor plan and arrange to have radiation levels recorded on plan for pinpointed survey areas.

g. If there is an ongoing radiation protection survey, performer may evaluate it in the light of existing records, recent technological developments, new legislation, or scientific data on new points of safety to be considered, and/or need for revised safety standards. Reviews elements of the program as described above, and makes appropriate changes in program.

5. If performer will develop, administer, or evaluate a program to check on personnel safe practice procedures, may proceed as follows:

    a. May plan routine use of isodose curves or survey results, as described earlier, on patterns of leakage and scattered radiation around a particular diagnostic unit so that radiologic technologists, radiologists, nurses and other staff can reduce exposure by deployment of working positions to safest areas.

        i) Takes into consideration scattering of radiation on entrance side of patient where incident beam intensity is greatest.
        ii) Considers the asymmetry of the external scattered radiation in the backscattering direction.
        iii) Considers all unusual possible positions of the x-ray beam in relation to personnel and includes observation of all uses of equipment before suggestions are made on deployment of personnel.
        iv) Designs report form for recommendations on personnel deployment.

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    b. Performer may institute a program to select the appropriate patient gonadal shielding for use with given examinations.

        i) Considers the types of patient shielding available, including cost, upkeep requirements and ease of use. Obtains manufacturer's specifications.
        ii) Considers the patient positions in common use, the beam angulation employed and areas of interest.
        iii) May design method to assess patient radiation dose reduction obtained with different types of shields (male shaped contact shield with carrier garment, shadow shield suspended from beam block, and/or flat contact sheet or apron). May consider comfort, ease of positioning, time required for use, ease of cleaning, testing.
        iv) May lay out steps for recommendation of type(s) of patient shielding.
        v) May design charts listing appropriate shielding for specific examinations and patient projections.

    c. May design a check list to spot check that proper practices are being followed, including any or all of the following as appropriate.

        i) Use of lead drapes and shields with fluoroscopic equipment.
        ii) Use of protective garments, such as apron and gloves for fluoroscopy and/or any surgical or entry procedures carried out during patient exposure, for radiologist and anyone else remaining in examination room.

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- iii) Use of immobilization devices rather than use of staff or relatives of patient to provide patient immobilization.
- iv) Proper shielding and positioning of anyone who must hold patient during exposure.
- v) Unauthorized personnel not allowed in examination room or control room.
- vi) Dark adaptation employed when appropriate.
- vii) Guarantees that no individual regularly holds patient and/or that females of reproductive age do not.
- viii) Proper check of possibility that female might be pregnant by reference to stage of menstrual cycle and/or interview.
- ix) Evidence of proper collimation.
- x) Evidence of appropriate use of patient gonadal shielding and shielding of other sensitive organs.

d. Determines criteria to be used to check conformance to safe practices, including observation of staff, review of radiographs, and patients' charts. May design report forms.

e. May design a regular inspection and testing program to be sure that all personnel shielding meet lead equivalent requirements and that shielding is in proper condition, without cracks, tears and thin patches. Selects tests and may design report forms.

f. Performer may evaluate an existing program by reviewing records. Considers recent technological developments, new legislation, or scientific data on patient or staff radiation safety. Reviews elements of the program in terms of reports, and makes

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changes in program or suggests changes of practices as appropriate.

6. If performer will develop, administer, or evaluate a program to monitor staff exposure to radiation, may proceed as follows:

a. Determines whether an in-house system is required, or whether dosimetric badges will be sent out for processing. May consider alternative costs, personnel requirements, space considerations, and make recommendations, or may proceed on decision already made.

b. Considers the characteristics of the type of monitoring systems available, such as dosimetric film, thermoluminescent dosimeters (TLD)

- i) Considers advantages of each method, such as use over a long period, permanence of records, limits of rate independence, ease of use, ruggedness in use, processing time, effect of humidity, sensitivity, and other factors.
- ii) Considers related equipment, and procedures needed such as film processing, calibration, densitometer, reader, annealing oven.
- iii) Considers relative costs.
- iv) Makes selection of method; may discuss with appropriate staff members and receive their decisions or opinions.

c. Once the method for personnel radiation monitoring is established, performer may design the actual program. Covers any or all of the following:

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i) Where the dosimetric badges will be worn.
ii) Distribution and collection of badges including frequency, procedure, and record keeping.
iii) Processing and recording of periodic and cumulative exposure data.
iv) Comparison of readings with acceptable periodic and cumulative exposure levels, including maximum permissible periodic and lifetime doses.
v) System to alert the institution that an unusual reading has been obtained.
vi) System to alert the institution that a cumulative dose is approaching unpermissible levels.
vii) Regular procedures to deal with staff to investigate possible radiation accidents, signs of unsafe conditions, unacceptable personal cumulative doses.
viii) May consider computerized reporting procedures.

d. Performer may evaluate an existing program by reviewing procedures and records. Considers recent technological developments, new requirements on maximum permissible doses, information on accident dangers. Considers changes needed in program, such as from external processing to in-house program, from film to TLD program, use of computer. Makes changes or suggests changes as appropriate.

7. If performer will develop, administer, or evaluate a calibration program for instruments used in the safety and quality control programs, may proceed as follows:

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a. Notes the instrumentation required for the various tests, such as exposure detection instruments, electrical measuring instruments, densitometer, sensitometer.
b. Considers the characteristics of the instruments and the appropriate calibration techniques. May refer to manufacturers' manuals.
c. Selects the appropriate calibration procedures for the instruments in use. May design report forms.
d. If there is an ongoing calibration program, may evaluate it in the light of existing records, recent technological developments, new legislation, or scientific evidence of need for revised standards.

8. Depending on whether it is requested or appropriate, performer may prepare, write out, or dictate a report presenting the various radiation protection monitoring programs:

a. May refer to the cost of the program(s) in relation to available alternatives, and benefits in terms of safety and efficiency. May refer to existing literature.
b. May consider and recommend appropriate staff level or job titles from which personnel should be selected to carry out monitoring and/or testing and record keeping tasks.
c. Performer presents and/or discusses proposed program as appropriate in response to assignment, or request, or on own initiative.
d. Performer may prepare and bring in alternative proposals as requested, answer questions on program as appropriate.

9. At any point during a current program or after the program is approved,

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List Elements Fully	List Elements Fully
performer may participate in developing, running, and maintaining the program. a. May arrange to have approved test or monitoring equipment purchased. b. May arrange to make preliminary tests and report results. c. May decide on or suggest the procedures for carrying out the monitoring and/or tests, given the equipment involved and the records to be kept. d. May write out and/or discuss the procedures. e. May arrange to teach the various procedures. f. May arrange to have maintenance staff and/or outside service personnel available to make needed adjustments as a result of monitoring and/or tests. g. During the course of the program, performer may arrange to spot check how procedures are being carried out, whether they are being done accurately, whether records are being kept appropriately.	

TASK DESCRIPTION SHEET

Task Code No. 547

This is page 1 of 6 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Primary and secondary protective barrier requirements calculated; net additional or total barrier thickness calculated for each surface for various materials; alternative costs calculated; report presented; calculations, decisions recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Institution's blueprints, lay-out plans; data on personnel exposure, workload, occupancy patterns; information on diagnostic x-ray equipment, manufacturers' specifications, tube positions, patient positions; ruler; calculator; charts on attenuation equivalency, transmission curves; requirements on maximum permissible exposure; formulas; forms; procedure descriptions; cost information; government guidelines; relevant literature

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologists; architect; building staff; installers; co-workers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Determining primary and secondary structural shielding required for diagnostic x-ray installations by determining values for the relevant parameters, variables; making calculations for thickness required for primary beam attenuation, and secondary, scatter and leakage radiation for all surfaces; determining whether current installation meets minimum requirements; determining thickness needed in addition to existing structures; presenting information for alternative materials and costs; discussing; recording calculations and decisions arrived at.

List Elements Fully

Performer determines the protective barrier (structural shielding) thicknesses for diagnostic x-ray installations when a new installation is being planned, when an existing one is to be modified, in response to a change in protection requirements, when high personnel exposure rates have been reported, or periodically, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer determines the initiating reason to carry out the calculations so as to be able to consider all the available relevant information.
    a. Considers whether new facilities are being planned, so alternatives on the use of space, materials, and methods can be noted.
    b. Considers whether existing facilities are being or may be modified, so that the existing structures can be considered as part of the protective barrier.
    c. Considers whether the diagnostic equipment to be deployed and shielded is already purchased or whether a general area is to be prepared ahead for all likely uses.
    d. Considers whether recalculations are required to check that existing facilities are in compliance

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 547

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List Elements Fully

List Elements Fully

with a change in safety regulations, to provide protection to an area with a change in workload or occupancy patterns, a change in equipment, or to check out recent high personnel exposure reports.

2. For new, existing, or planned installations, may check specifications for related physical requirements:
   a. Checks that control room for the diagnostic equipment is or will be in an adjacent room or isolated booth in examination room.
   b. Checks that operator will be able to see patient and communicate from a shielded position when operating controls.
   c. Checks that the protective barrier of the control area is at the minimum prescribed height.
   d. Checks that the control booth or room is or will be arranged in relation to the diagnostic equipment so that the radiation must be scattered at least twice before entering booth, or that interlock makes exposure impossible unless a protective door is in the closed position.

3. If not already done, performer obtains all the appropriate information needed to make the needed calculations. May discuss with architect, radiologists, other staff.
   a. Obtains information on the shielding characteristics for primary and secondary barriers, acceptable levels of stray radiation in current legislation and/or any more rigorous local or institutional standards.
   b. May obtain documents giving the layout of the existing or planned facility, such as blueprints. Includes surrounding proposed or existing installations and structures, existing and/or proposed uses. Calculates the room dimensions, including the ceiling height, flooring, and the ceiling height of the floor below.
   c. Obtains material on the exposure characteristics of all existing or proposed diagnostic x-ray equipment. May obtain manufacturer's specifications.
   d. Investigates the nature of the occupancy of the area and of each room immediately adjacent to the x-ray room in all directions, as well as above and below. May obtain documents giving guidance on estimating workloads, possible beam directions, usual occupancies in and around diagnostic installations, or uses tables prepared as part of in-house program.
   e. May obtain information on the materials available for radiation shielding, equivalency tables for the attenuation properties of various materials, or uses information already prepared.
   f. May obtain the appropriate formulas, transmission curve charts for calculating required barrier thicknesses of various materials.
   g. May obtain description of the calculation procedures and forms already prepared for use, including the appropriate parameters, variables, and information to obtain.
      i) Considers how to calculate or reviews descriptions of procedures to calculate the maximum workload, use factor, and occupancy factor.
      ii) Considers or notes descriptions of how to determine which areas require a primary protective barrier (to be placed in the useful beam to reduce the radiation to the required degree).

TASK DESCRIPTION SHEET (continued)

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This is page 3 of 6 for this task.

List Elements Fully

iii) Considers or reviews steps to determine the thicknesses for the primary and for the secondary barriers.

h. If not already done, obtains information about all the types of equipment to be dealt with, such as overhead radiography equipment, fluoroscopy, cineradiography, spot filming, tomography, computerized transverse axial tomography.

- i) Considers the types of examinations, the expected patient and tube positions involved and/or the examinations done.
- ii) Notes the planned or existing location of all the x-ray tubes within the area and location of the focal spot in the beam column(s).
- iii) May arrange to interview staff or observe or obtain information about all the uses of the central beam, so that any exposure from the useful beam incident to floors, ceilings, walls, and the control booth can be accounted for. Takes into account all normal conditions of use of equipment, the worst conditions of exposure, possible careless use.
- iv) If not already done, performer collects necessary information for calculation of workload, use factor, occupancy rate, in relation to maximum permissible dose equivalents, for calculation of secondary barrier requirements. Considers existing, proposed and possible future space uses.

i. Obtains all instruments needed for calculations, all forms, report documents, and any relevant records already on file, such as in a periodic ongoing program for an existing facility.

List Elements Fully

j. May obtain cost tables related to various types of shielding and shielding materials.

4. If performer will calculate the thickness of the primary protective barriers, may proceed as follows:

a. Notes which surfaces, such as each individual wall, the ceiling, floor, control booth wall and/or window, will be exposed to the useful beam and will require a separate calculation. Proceeds separately for each surface so exposed so as to account for differences in surrounding occupancies, differences in the attenuation properties of existing structures, different use rates.

b. Notes whether the useful beam may exist only in the region between the x-ray tube and the film or imaging system, so that the image detector is the primary barrier (such as with fluoroscopy) and only secondary shielding may be needed.

c. Performer collects the information on the basic parameters such as the quality of the radiation (maximum kVp), quantity per time period (mA min.), distance between the target and the surface being considered where the beam is incident, and the materials being considered.

- i) Calculates the occupancy factor by which workload should be multiplied for the degree or type of occupancy of the area. Records.
- ii) Calculates the workload (use of the primary beam in mA min. per week). Records.

TASK DESCRIPTION SHEET (continued)

Task Code No. 547

This is page 4 of 6 for this task.

List Elements Fully

iii) Calculates the use factor (the fraction of the workload during which the useful beam is pointed to the surface for which the barrier is being designed). Records.

d. Calculates the ordinate of the transmission curve (K = transmitted R/mA min. at a given reference distance) using the appropriate formula and the appropriate figures for the maximum permissible exposure for the design purpose, the distance from the x-ray focal spot (target) to the surface, and the workload adjusted by the occupancy factor and the use factor. Records.

e. Locates the required primary barrier thickness for the barrier material(s) of interest using the transmission curve charts. If appropriate, converts for other materials using equivalency table, or calculates directly using density information. Records.

f. Repeats for all other relevant surfaces and all other relevant sources of radiation.

5. If performer will calculate the thickness of the secondary barrier, may proceed as follows:

a. Notes which surfaces will be exposed only to leakage and scattered radiation and will require only secondary shielding protection.

i) For each individual wall, floor area (if appropriate), or ceiling area, proceeds separately so as to account for differences in surrounding occupancies, differences in the attenuation properties of the existing structures, and different scatter and leakage transmission rates within the room.

List Elements Fully

ii) Determines the location of the scatterer(s) in the area of interest.

b. Collects the information on the basic parameters separately for scatter radiation and leakage radiation.

c. May proceed as follows for scatter radiation:

i) Determines the appropriate formula, based on the 90° scattered radiation of the useful beam below a given maximum kV (such as 500 kV).

ii) Determines the field area at the scatterer.

iii) Determines the distances from the target to the scatterer and from the target to the surface of interest.

iv) Calculates the ordinate of the transmission curve (K) using appropriate figures for maximum permissible exposure for design purposes, the ratio of scattered exposure to the incident exposure, the workload, the occupancy factor, the distances from the target to the scatterer and target to the surface of interest, and the area of the useful beam at the scatterer.

v) Sums if appropriate for surfaces receiving scatter from more than one scatterer.

vi) Locates the required secondary barrier thickness for scatter radiation for the barrier material(s) of interest using the transmission curve charts as described above. Converts to other materials; repeats for all other relevant surfaces and all other relevant sources of radiation. Records.

TASK DESCRIPTION SHEET (continued)

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This is page 5 of 6 for this task.

List Elements Fully

d. May proceed as follows for leakage radiation (the number of half-value layers required in the secondary barrier):

  i) May decide to check that tube housing complies with minimum requirements for diagnostic housing, or has this done.
  ii) Determines the maximum continuous tube current for the equipment.
  iii) Calculates the transmission factor for the tube housing in terms of the maximum permissible exposure for the design purpose, distance from target to area of interest, the maximum continuous tube current, workload, and the occupancy factor.
  iv) Computes the leakage barrier thickness in terms of the number of half-value layers (HVL) of a given aluminum equivalence for the given transmission factor.
  v) Expresses the required secondary barrier thickness for leakage radiation for the barrier material(s) of interest. Records.

e. Performer calculates the total thickness requirements for each secondary barrier surface as appropriate.

  i) If the leakage and scatter radiation barrier requirements are about the same, may add one HVL to the larger of the two thicknesses.
  ii) If the two thicknesses differ by three HVL's or more, may select the thicker dimension.
  iii) Records total secondary barrier thickness for each surface being considered for each material.

6. Once the required primary and secondary barrier thicknesses have been determined for each surface area, performer may consider any or all of the following, depending on the purpose to which the information is to be put:

List Elements Fully

a. May calculate whether existing barrier(s) meet legal requirements and/or more rigorous local safety standards. Records. May relate this to current problem such as high personnel exposure readings, and inform appropriate staff members. May discuss.
b. For existing facilities may calculate the equivalent thicknesses of existing structures and subtract these from the required thicknesses to obtain the net shielding thicknesses required for each existing structural member. Records.
c. May consult information on types of barrier construction, alternative materials, and provide a list of alternative barriers that could be designed; presents alternative material and installation costs; describes flexibility of use; considers provision for future use. May obtain information or discuss with architect, building staff, installers.
d. May calculate and present other alternatives for consideration, such as different types of x-ray equipment, different deployment of x-ray equipment within the area from the point of view of reducing the cost of necessary shielding, and with different projected future workloads.
e. Performer may record the maximum acceptable exposure transmissions through the primary and/or secondary barriers for use in radiation protection surveys.

7. Performer records calculations and/or prepares a report giving required barrier thicknesses, alternatives, and

TASK DESCRIPTION SHEET (continued)

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This is page 6 of 6 for this task.

List Elements Fully	List Elements Fully
their relative advantages and disadvantages: a. May discuss during or after preparation. b. Presents report to appropriate staff member(s); answers related questions. c. May express opinions on safety needs, suggest options. d. May refer to literature on current practice, information in government publications. e. May record any decisions made or orders given.	

TASK DESCRIPTION SHEET

Task Code No. 548

This is page 1 of 4 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Fluoroscopic unit's maximum entrance exposure rate, maximum barrier transmission rate, and ratio of rates checked using exposure detector(s), lead plate, beam attenuation block; test results evaluated against acceptable standards; decision made to refuse, repair equipment; test results recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Diagnostic fluoroscope unit, controls; manufacturer's specifications; tube rating chart; test descriptions, criteria, records, forms; lead sheet; beam attenuation block; ion chamber radiation detectors and meter; support stands; stopwatch; protective lead garments, shields; pen; pencil; out-of-order sign

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; radiologist; repair service personnel or installers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking maximum entrance exposure rate and primary barrier transmitted radiation rate for fluoroscopic equipment by setting up for tests; making exposures at maximum settings, with lead plate for automatic brightness control; measuring exposure using ion chamber; making exposure on protective barrier with beam attenuator in place; calculating exposure and radiation rates; comparing results with acceptable limits; determining whether equipment needs replacement, repair; recording test results.

List Elements Fully

Performer checks that the maximum entrance exposure rate for fluoroscopic equipment and the radiation rate across the primary protective barrier are within acceptable limits periodically, or when new equipment is installed as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes type of unit involved, whether entrance exposure rate will be tested and/or the exposure rate due to transmission through the primary barrier and from the image intensifier.

   a. Obtains test descriptions, forms, records on allowable exposure rates. Obtains manufacturer's specifications, appropriate test materials.
   b. Checks that unit has been tested for conventional radiographic system checks such as calibration, position of focal spot, timer accuracy. If not already done, may arrange such tests or decide to do personally.

2. If performer will check the maximum entrance exposure rate of fluoroscopic equipment, may proceed as follows:

   a. Notes whether the equipment involves automatic

OK-RP;RR;RR

6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

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This is page 2 of 4 for this task.

List Elements Fully

brightness (exposure rate) control, optional high level control, and/or manual control, image intensifier, under-the-table or over-the-table tube. Notes whether kVp and/or mA is variable.

b. For automatic mode obtains a lead plate to produce maximum machine output at a given factor setting. Obtains a beam attenuator block for use with an image intensifying system. Obtains an appropriate rate or integrating ionization chamber with meter (exposure detector); may obtain support stands for use with test objects.

c. Sets up for test:

i) Removes all compression cones, removable grids, spot film carriage from the path of the primary beam.

ii) For non-remote control equipment, dons protective leaded rubber garments such as apron and gloves. Makes sure that no one is in examination room. May place shielding around equipment.

iii) In the control room makes sure that indicator light shows that x-ray generator is "warmed up" and ready for use. Makes sure that all circuits have been stabilized. If appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter. As appropriate, sets x-ray generator mode selector(s) to fluoroscopic mode.

iv) If appropriate and not already done, performer may connect TV monitor to power outlet. Turns on monitor and checks that "ready" light is on.

v) If appropriate, selects the larger field size selector if there is dual image intensifier.

List Elements Fully

vi) For an under-the-table tube, performer adjusts the imaging assembly so that it is 30 cm (12 inches) above the tabletop. Attaches the beam attenuation block to the image receptor (or places on a support stand) above tabletop so that the beam attenuator is 11 cm above the tabletop. Places the exposure detector on the tabletop so that it will read exposure at 1 cm above the tabletop, at the point where the center of the useful beam enters the patient (so that there are 10 cm between the image receptor and the exposure detection point).

vii) For an over-the-table tube, performer places the exposure detector on a support stand 30 cm above the tabletop. Positions tube assembly so that the bottom of the beam limiting device or spacer is as close as possible to the point of measurement of the exposure detector. Places the beam attenuator above the table and 10 cm under the detector (20 cm above the tabletop).

viii) With an automatic brightness control system, attaches a lead sheet of standard size and thickness under the center of the beam attenuator for an under-the-table tube. For an over-the-table tube places lead sheet over the attenuator.

ix) Centers beam column, attenuator block, lead sheet (if being used) and image

TASK DESCRIPTION SHEET (continued)

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This is page 3 of 4 for this task.

List Elements Fully

receptor. Collimates to an area somewhat smaller than the lead sheet.

x) Performer sets technical factors for the test. Selects maximum mA and/or kVp setting within the posted limits of the tube rating chart for the unit. Sets mode for automatic brightness control if it is available.

d. If unit does not have automatic brightness control, performer sets technical factors at the maximum rated mA and kVp settings for fluoroscopy within the limits of the tube rating chart. Sets up for and carries out test as described.

e. Performer makes exposure:

i) If using an integrating exposure meter, uses stopwatch to record actual exposure time. Records. Calculates R/min. and records.

ii) If using a rate exposure meter, allows the instrument to settle, and records rate. Converts to R/min. if appropriate. Records.

f. If unit has an optional high level control, performer sets controls to high level control mode. Sets factors for maximum kVp and/or mA settings within posted limits of tube. Carries out test first without using optional high level control.

i) Activates optional high level control and notes whether such exposure can be made only by additional and continuous pressure.

ii) Checks that an audible signal indicates use of high level control.

List Elements Fully

g. Performer determines whether the measured entrance exposure rate(s) exceed the appropriate maximum R/min. for the type of equipment options involved (such as 10 R/min. for automatic brightness controlled unit without optional high level control; 5 R/min. for manual mode and optional high level control).

3. If performer will check the radiation transmission rate through the primary protective barrier (in R/min. of the entrance exposure rate), maintains the test set up as described above, but removes the lead sheet. Sets the collimator or shutters to fully open position. May proceed as follows:

a. For test in the automatic exposure control mode, repeats entrance exposure rate procedure with beam attenuator block in place as described above, at maximum brightness setting, without lead sheet in place. Records the entrance exposure rate.

b. If not already done, obtains a transmission ionization chamber to record the radiation rate 10 cm's from the surface of the fluoroscopic imaging assembly beyond the plane of the image receptor. Uses a 100 R cm^2 ion chamber, or prepares other ion chamber so that the sensitive volume of the chamber will be 10 cm from the surface plane of reference. Connects ion chamber to meter if not already done.

c. Plans to use the figure(s) obtained above for the entrance exposure rate(s) for the manual exposure mode and/or the automatic brightness control mode as appropriate.

TASK DESCRIPTION SHEET (continued)

Task Code No. 548

This is page 4 of 4 for this task.

List Elements Fully

d. Sets up for test:

   i) Places the ion chamber in position on the primary barrier of an under-the-table tube, or below the primary barrier of an over-the-table tube, so that the exposure area to be detected is 10 cm from the external surface of the imaging assembly.
   ii) Maintains the technical settings used for the manual mode or the automatic brightness control mode as used for test of entrance exposure rate (maximum settings within limits of the tube rating chart).

e. Makes exposure. Measures and records the transmission rate.
f. Performer moves the ion chamber on the primary barrier to successive positions such as over seams, joints, and areas of possible leakage.

   i) Repeats exposure, measurement, and recording of transmission rates.
   ii) Selects the maximum transmission rate obtained for use in calculation.
   iii) Divides the maximum transmission rate by the appropriate counterpart entrance exposure rate. Treats this as the maximum primary barrier transmission per entrance exposure rate. Records.

g. Determines whether the maximum rate ratio as calculated is within acceptable limits. Records.

4. Based on the test results, performer determines whether the equipment being tested meets acceptable limits for the entrance exposure rate and the barrier transmitted rate per entrance exposure rate, at given legislated requirements and/or any more rigorous local or institutional requirements.

   a. Determines whether new unit should be refused or whether service staff should be required to make adjustments or replacement.
   b. Determines whether problem requires shut down of unit until adjustments or repairs are made.
   c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legal requirements.
   d. If performer decides that the results indicate a major fault, performer informs repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit.
   e. If not already done, performer marks test records with date; may record evaluation of results and what was done. Performer places records in appropriate location for filing. Returns test materials to storage or has this done.

TASK DESCRIPTION SHEET

Task Code No. 549

This is page 1 of 4 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Diagnostic x-ray unit's source assembly leakage radiation rate checked using fluorescent strips and/or exposure detector, beam block; test results evaluated against acceptable standards; decision made to refuse, repair equipment; test results recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Diagnostic x-ray unit, controls; manufacturer's specifications; tube rating and cooling charts; test descriptions, criteria, records, forms; beam block; ion chamber radiation detector and meter; support stand; fluorescent strips; protective lead garments, shields; pen; pencil; out-of-order sign

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; radiologist; repair service personnel or installers

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Checking the leakage radiation rate from the source assembly of diagnostic x-ray equipment by setting up for test using fluorescent strips; making exposures; noting leakage points; making and recording radiation rates in all directions from tube target at appropriate distance; calculating average leakage radiation rates; comparing results with acceptable limits; determining whether equipment needs replacement, repair; recording test results.

List Elements Fully

Performer checks that the leakage radiation from the source assembly of diagnostic x-ray equipment (including tube head and beam limiting device) is within acceptable limits periodically, or when new equipment is installed, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes the type of unit involved, whether new installation is being checked or whether leakage radiation is being given periodic test.

   a. Obtains test description, forms, records, and information on allowable leakage radiation rates.

      i) Notes the positions where the leakage radiation will be measured.
      ii) Notes type of beam limiting device and type of beam block to be used in test.
      iii) Notes whether fluorescent strips will be used to pinpoint possible leakage.
      iv) Notes whether leakage through the collimator and tube head leakage are to be treated separately.

   b. Checks that unit has been tested for conventional radiographic system checks

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6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

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such as calibration, position of focal spot, timer accuracy. If not already done, may arrange such tests or decide to do personally.

c. Obtains manufacturer's specifications, appropriate test materials including appropriate radiation detector (such as ionization chamber and meter), beam block, fluorescent strips, tube rating and cooling charts.

2. Performer sets up for the test:

a. For fluoroscopic equipment without remote controls, performer dons protective leaded rubber garments such as apron and gloves. Makes sure that no one is in examination room or control room.

b. In the control room makes sure that indicator light shows that x-ray generator is "warmed up" and ready for use. Makes sure that all circuits have been stabilized. If appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter. As appropriate, sets x-ray generator to the selected mode.

c. Sets the test technical factors as appropriate to the equipment:

  i) If test is being done periodically, sets factors as recorded for prior test use with the given equipment.
  ii) For new equipment, sets factors for the maximum rated continuous tube current for the maximum rated peak tube potential, or to a higher current within a safe time limit determined from the limits of the tube rating chart and the cooling chart.
  iii) If not already done, records factors.

List Elements Fully

d. If possible leakage points are to be noted, performer places fluorescent strips over all sides of the source assembly.

  i) Darkens the room.
  ii) Prepares to observe and record location of any light spots evident during exposure.

e. If not using fluorescent strips, plans to place the radiation detection survey meter in several locations that are each one meter from the focal spot (target) of the tube, covering all directions.

  i) Notes the locations within an area of 100 square centimeters (15.5 sq.in.) within which observations will be made and the radiation rate averaged.
  ii) Checks that neither the length nor the width of the area (plane) is more than 20 cm. (7.9 inches).

3. If using fluorescent strips, performer may proceed as follows:

a. Activates the fluoroscopic exposure. Observes the entire visible surface of the tube housing including the beam limiting device.

  i) If necessary, terminates exposure and repositions tube head so that all surfaces can be observed.
  ii) During exposure, performer notes the location of any pinpoints or larger areas of light.
  iii) Plans to make an exposure reading at every light point noted.

TASK DESCRIPTION SHEET (continued)

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b. Performer may plan the exposure readings so that a series can be taken within a given plane of 100 square centimeters (at one meter from the target) and averaged. Sets up as in (2,e) above.

c. If no pinpoints of light are observed, records and considers equipment to be in compliance with requirements.

4. If using radiation detector, performer places detection device in the first (or next) position on the tube housing and/or collimator, or on a support stand, so that the cell measured is one meter from the target, in a predetermined test position, or at a point located by use of the fluorescent strips.

   a. Makes exposure and records. If appropriate, converts to mR/hr. and records.
   b. Repeats the exposure readings in mR/hr. for other test points within the 100 square cm. area and records.

      i) Repeats for additional 100 square cm. areas until leakage exposure is recorded for all test points and/or all light points observed during use of fluorescent strips.
      ii) May separate records for points on the tube housing from points on the collimator.

   c. For any and all given areas of 100 square cm's, performer calculates the average maximum exposure rate. May average to obtain maximum continuous operation at maximum kVp, or prorates to the duty cycle for operation of the tube at its maximum kVp.
   d. Performer checks whether any average maximum exposure rate exceeds the permissible maximum (such as 100 mR/hr.) given by legislation or any more rigorous local or institutional requirements. Records.

      i) May repeat the test and the averaging to be sure the figures are correct.
      ii) May provide separate calculations and checks for tube head and collimator readings.

5. Based on the test results, performer determines whether the equipment being tested meets acceptable limits for leakage radiation.

   a. If equipment meets acceptable standards because of averaging, but radiation leakage has been observed, performer may arrange to have shielding provided at the leakage area pinpointed.
   b. If equipment does not meet acceptable standards, determines whether new unit should be refused or whether service staff should be required to make adjustments or replacements of shielding. Determines whether problem requires shut down of unit until adjustments or repairs are made.
   c. Performer may discuss results of test with supervisor and/or radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient and personnel exposure, legal requirements.
   d. Performer may inform repair service by calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit.
   e. If not already done, performer marks test records with date; may record evaluation of results

TASK DESCRIPTION SHEET (continued)

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List Elements Fully	List Elements Fully
and what was done. Performer places records in appropriate location for filing. Returns test materials to storage or has this done.	

TASK DESCRIPTION SHEET

Task Code No. 550

This is page 1 of 6 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Stray radiation recorded within x-ray installation, across primary and secondary barriers; isodose chart prepared; deployment of staff in room suggested; survey results evaluated against acceptable standards; decision made to refuse, test, repair equipment; survey results recorded; report prepared.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Diagnostic x-ray unit, controls; serial film changer; cine, spotfilm, tomography devices; dosimetric film or TLD packets; manufacturer's specifications; tube rating, technique charts; survey descrptions, records, forms; phantom; ion chamber radiation detector and meter; protective lead garments, shields; pen; pencil; out-of-order sign; phone, cassettes; primary and secondary barriers

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. **If "Yes" to q. 3:** Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; radiologist; repair service personnel or installers

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Conducting protection survey of stray radiation within diagnostic x-ray installation and transmission across primary and secondary protective barriers, by setting up for typical and worst exposure conditions; placing exposure detector;making and recording exposures within room, behind protective barriers; creating isodose chart;determining whether exposure is within acceptable limits for personnel maximum permissible dose equivalents;suggesting corrections, deployment of staff in room;determining whether equipment needs testing,replacement,repair;recording reresults and/or preparing report.

List Elements Fully

Performer conducts a protection survey of stray radiation rates within diagnostic x-ray facilities and of primary and secondary barrier transmitted radiation rates for a new facility, a new piece of equipment, when high personnel exposure rates are reported, or periodically, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes whether the survey is for a new facility, new equipment, whether a periodic check is due, whether high personnel exposure rates are being investigated.
   a. Notes the facility to be surveyed, the type(s) of diagnostic equipment installed, and the location.
   b. Notes whether a test will be made to check the protection equivalence of the viewing system window with the walls of control booth.
   c. Notes whether a survey report is to be prepared.
   d. Notes whether isodose curves showing the radiation field in the examination room are to be prepared, whether results will be used to deploy staff members who must be in room during exposure.
   e. Performer obtains the appropriate survey and test descriptions, forms, and

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

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This is page 2 of 6 for this task.

List Elements Fully

any prior records as appropriate for the purpose(s) for which the survey results will be used:

i) Obtains information on existing legislated and/or institutional standards for permissible primary and secondary barrier transmitted radiation to occupationally exposed and non-occupationally exposed personnel. May obtain information generated by prior determination of structural shielding requirements for primary and secondary barriers.

ii) Considers the types of equipment to be dealt with, such as overhead radiography, serial filming, fluoroscopy, cineradiography, spot filming, tomography, computerized transverse axial tomography. May obtain manufacturer's specifications.

iii) Notes the technical factors to be used for the survey (normal exposure factors for common examinations and/or check under "worst possible conditions").

iv) Notes the beam directions to be used, including direction of the useful beam at primary barriers such as walls, floors.

v) Notes the points at which the radiation will be measured for scatter, such as operator's position behind the protective barrier, at the entrance to the room, at the edge of the protective barrier, near the anticipated location of the patient, at points around the vertical axis of rotation of the x-ray tube. For fluoroscopy, may include locations to record scatter through the bucky slot, at the foot of the table, at the operator's position at side of the table, at staff locations such as at nursing stations, at locations behind protective drape, and in same position without drape. May plan to include points of exposure that are unique and characteristic of the given piece of equipment.

List Elements Fully

vi) Notes the points at which transmission through walls, floors, and ceilings will be measured, especially where the primary beam may be directed, such as in across-table projections, use with upright cassette holders.

vii) Checks that acceptable radiation levels have been calculated and recorded for each point at which radiation will be measured (reflecting workload, use factor, occupancy rate in relation to maximum permissible dose equivalents).

viii) Notes the appropriate radiation detectors and type of phantom to use for survey. May check whether integrating ion chamber or instantaneous exposure rate meter will be used.

ix) Checks that the radiation detector (such as ionization chamber and meter) has been properly calibrated for low energy x-rays, and that the exposure time to be used exceeds the time-constant of any ratemeter to be used.

f. Checks that the x-ray equipment and installation has already been evaluated for overall layout requirements. Checks that unit has been tested for conventional radiographic system checks, such as calibration, maximum entrance exposure rates, tube leakage rates, timer accuracy. If not already done, may

TASK DESCRIPTION SHEET (continued)

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This is page 3 of 6 for this task.

List Elements Fully

arrange such tests or decide to do personally.

2. Performer sets up for the radiation measurement in the mode to be tested:

   a. In the control room performer makes sure that indicator light shows that x-ray generator is "warmed up" and ready for use. Makes sure that all circuits have been stabilized. If appropriate, checks line voltage meter and, if needed, turns compensator dial until needle is aligned properly on line meter.

      i) Sets mode selector(s) for the appropriate examination mode, such as radiography, serial filming, fluoroscopy, cineradiography, spot filming, tomography, computerized transverse axial tomography.
      ii) Sets special options appropriate for modality, such as automatic brightness control, manual adjustment of collimators, selection of level of interest and size of "slice" for tomography. Selects appropriate field size selector for dual image intensifier.
      iii) For fluoroscopic equipment without remote controls, dons protective leaded rubber garments such as apron and gloves. Makes sure that no one is in examination or control room. If appropriate and not already done, may connect TV monitor to power outlet. Turns on monitor and checks that "ready" light is on.

   b. Performer may place a phantom simulating tissue equivalences (as in a real patient) on the tabletop. Centers.

List Elements Fully

   c. Performer may position the x-ray tube in its normal operating position, such as at right angles to the table. If so, may also plan exposures with beam directed for across-table exposures and/or at vertical cassette holders, and/or at other unusual angulations such as with conventional or computerized tomography, or as with rotating carriages used in neuroradiography. To measure transmission across a primary barrier such as a wall, directs the tube directly at the barrier.
   d. Adjusts the target-to-skin and target-to-film distances as appropriate to the equipment and the test procedure.
   e. Sets collimator to manual control and adjusts collimators to wide open position for "worst condition" test, and/or plans to also use appropriate field size for a simulated examination.
   f. Sets technical factors at predetermined test levels such as for maximum rated kVp or normal kVp usage, at 100 mA's or at appropriate mA, and for time setting, within the limits of the tube rating chart.
   g. As appropriate to test and the modality being monitored, sets the time frame rate, spotfilm program, or level of tomographic slice and angle of amplitude. May plan to vary these during test.
   h. If not already done, records all the exposure-determining dimensions being used and fills in any other information on the report form.
   i. Performer places the radiation detection instrument in the first location as determined by the survey design.

TASK DESCRIPTION SHEET (continued)

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List Elements Fully

- i) May place the radiation detector in any of the locations mentioned earlier to measure scattered radiation within the examination room (to which involved personnel could be exposed by remaining in room).
- ii) May place the radiation detector directly behind a primary barrier, such as wall where the effective beam is directed, to measure transmission across primary barrier to non-involved personnel.
- iii) May place the radiation detector directly behind a secondary barrier to measure transmission across the secondary barrier to non-involved personnel.
- iv) Sets up radiation detector meter so that radiation exposure (or rate) can be read in the control room.

3. When the first test exposure has been set up, performer initiates the exposure. Allows rate meter to stabilize. Records the exposure or the exposure rate as appropriate.

   a. Performer repeats with radiation detector in the same position for all other test conditions and modalities, and records.
   b. Repeats for all other positions planned for the survey, such as at other points to detect scatter within the room, points to detect transmission across the primary barriers, across the secondary barriers. Records.
   c. If planning to draw isodose curves of the radiation field in the room, continues to place the radiation detection instrument to create points on concentric planes about the target.

List Elements Fully

4. If testing the protection equivalence of a viewing system window with a wall of the control booth, performer uses an appropriate ion chamber and places it first on the operator's side of the wall and then on the operator's side of the glass, centered to the field created by the useful beam pointed directly at the radiation detector. Makes exposures for each material and records radiation.

   a. If the x-ray tube cannot be oriented towards the window and wall, performer identifies two appropriate dosimetric packets. Tapes one to the operator's side of the glass, and the other to the operator's side of the wall of the booth.
   b. Arranges to leave in place for at least a minimum period of time. Records dates.
   c. Arranges to have dosimetric film or thermoluminescent packet processed and have density recorded.
   d. Compares results for the two.

5. Performer compares the recorded exposure rates for the test points (to check scattered radiation within the room, transmission across the primary barriers, transmission across the secondary barriers) with the maximum permissible rates allowed for involved or non-involved personnel as given in the test criteria.

   a. Determines whether the stray radiation being produced is within acceptable limits.
   b. May compare the transmission rates for the glass and the wall of the operator's barrier and determine whether the protection offered by the glass is equivalent to that offered by the wall.

TASK DESCRIPTION SHEET (continued)

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List Elements Fully

c. Performer may draw or use a floor plan of the room showing the location of the x-ray tube target, location of the controls, barriers, and the test points at which radiation was measured. Includes the scale to which the drawing refers. Enters the radiation readings obtained.

6. If performer will prepare isodose curves, connects all the points at which the same exposure reading was obtained so that a contour appears for each obtained exposure level.

   a. Performer may note the pattern of exposure around the unit.
   b. May determine which are the safest positions for any personnel who must remain in room during exposure (such as for surgical procedures, or to monitor life support equipment, or to provide patient with medication), by observing pattern of radiation within the room.

      i) Notes the best side of table on which to stand, where additional personnel shielding would be useful without obstructing work.
      ii) Notes high points of scattered radiation as areas for personnel to avoid.
      iii) Depending on institutional procedures, prepares a report for use by personnel such as radiologists, technologists and/or nurses; discusses directly or provides information on prepared form.

7. If performer will fill out a radiation protection survey report, makes sure to include all relevant information such as exposure factors, field size, phantom used, equipment tests, modalities, filtration, other test conditions, locations and type of exposure detection instrument, the measured exposure levels.

List Elements Fully

   a. Includes the identification of the x-ray unit and the date.
   b. Includes the evaluation of the exposure levels in terms of workload, use factor, and occupancy factor related to maximum permissible dose equivalents for occupationally exposed and non-occupationally exposed individuals.
   c. May include the floor plan with the recorded radiation levels.
   d. If the exposure rates are not judged to be within the appropriate legislated maximum limits or more rigorous institutional or local limits, performer may consider and indicate the source of the problem, such as inadequate primary or secondary protective barriers, excessive leakage, scattered radiation, defective equipment. May refer to a check list.
   e. Performer may suggest corrective measures such as additional shielding, repair of shielding.
   f. Determines whether new unit or installation should be refused or whether service staff should be required to make adjustments or replacements.
   g. Determines whether problem requires shut down of unit until further tests, adjustments, or repairs are made.
   h. Performer may discuss results of survey with supervisor and/or the radiologist in charge before determining what to do. May explain effect of problems and deviations from acceptable standards in terms of patient and personnel exposure, diagnostic reliability, safety and legal requirements.
   i. If performer decides that the results indicate a major fault, performer informs repair service by

TASK DESCRIPTION SHEET (continued)

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List Elements Fully	List Elements Fully
calling in-house repair personnel or manufacturer's repair service. Indicates the results of the test and the unit involved. May place out-of-order sign on unit. j. If not already done, performer marks survey records with date; may record evaluation of results and what was done. Performer places records in appropriate location for filing. Returns survey materials to storage or has this done.	

TASK DESCRIPTION SHEET

Task Code No. 551

This is page 1 of 3 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Dosimetric packet inserts refilled with coded dosimeter film, filters or TLD's; samples identified and set aside for calibration and "background" measurement; packets identified, placed for distribution; assembly and/or distribution recorded.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Dosimetric films; insert containers; filters; badge holders; TLD's; log book; list of staff names; shielded dosimetry packet containers; pen, pencil; marker; identification markers; protected storage areas

3. **Is there a recipient, respondent or co-worker involved in the task?** Yes...(X) No...( )

4. **If "Yes" to q. 3:** Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers; supervisors; darkroom staff

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing personnel radiation monitoring dosimetric film or TLD badges and distributing by checking for pretesting, annealing; identifying batch; selecting samples for calibration and background; assembling inserts; identifying inserts and/or placing in badge holders; distributing; recording.

List Elements Fully

Performer prepares dosimetric badges for use in a personnel exposure monitoring program.

1. Depending on whether the dosimetry packets make use of personnel monitoring dosimetric film or thermoluminescent dosimeters (TLD), performer reviews the necessary steps to be done and notes the information needed.
    a. Determines the number of staff packets to be prepared and the number of films or TLD ribbons and chips to be set aside for calibration or as controls to obtain background readings. Notes that personnel packets, calibration and control samples must all be processed together and come from the same source (manufacturer, batch, exposure characteristics).
    b. Notes whether two sets of badge holders with staff identification are rotated, so that performer will be putting the badge inserts into the holders, or whether performer will prepare and identify the packets for distribution to staff (who will place inserts into badge holders personally).
    c. Notes what will be placed into the holders, such as TLD ribbon(s), chips, or dosimetric film(s), filters.

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 551

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List Elements Fully

d. Checks whether films to be used have already been examined for exposure characteristics and approved, or that TLD materials have already been annealed as appropriate.

e. Notes where the preparation of the dosimetric packets will be done, as appropriate to the light and humidity sensitivity of the materials to be used.

2. If the personnel radiation exposure monitoring program uses dosimetric film in film badges, performer may proceed as follows:

a. Performer goes to appropriate location to obtain the dosimetric film, such as storage area in darkroom.

   i) Does not enter darkroom while red light is on; if open, knocks to make sure that room is empty or can be entered.
   ii) Makes sure that no unexposed film is in the open before turning on lights other than safelight.
   iii) Makes sure hands are clean and dry.

b. Performer obtains a batch of dosimetric film that has already been checked for its exposure characteristics and approved for use in diagnostic x-ray personnel monitoring. May proceed as follows:

   i) Notes and records emulsion number.
   ii) Randomly selects a predetermined number of films and sets aside for calibration.
   iii) Randomly selects a predetermined number of films to be used as controls to determine background density.

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   iv) Identifies each sample with the emulsion number, date, and the purpose for each, so that exposed films from badges and both samples will be processed together.
   v) Stores samples in protected location away from any exposure.

c. Depending on the extent to which the preparation of the inserts is carried out in-house, and whether badges are rotated, performer obtains insert containers, filters, and the films.

   i) May obtain the badges labeled with the names of staff members and containing the filters.
   ii) May obtain identifiers for the inserts.

d. Performer may place one or two dosimetric films into insert container and several filters as appropriate so that "open window" exposure can be obtained plus a filtered exposure.

e. May place inserts into badge holders that have staff names on them, or mark inserts in a predetermined way to appropriately identify the inserts.

3. If the personnel radiation exposure monitoring program uses TLD's in badges, performer may proceed as follows:

a. Performer goes to the appropriate location to obtain the thermoluminescent inserts used. Makes sure that temperature and humidity conditions are appropriate for preparing the badge inserts.

b. Performer obtains a batch of TLD's of appropriate type, such as those incorporating a heater ribbon and detector chips.

TASK DESCRIPTION SHEET (continued)

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This is page 3 of 3 for this task.

List Elements Fully

- i) Checks that the batch have all come from the same manufacturer, at the same time, and were all annealed (or "quenched") together as appropriate. May check that samples have already been pretested and batch approved.
- ii) Assigns a unique code number to this batch of TLD's. Records.
- iii) Randomly selects a predetermined number of TLD's and sets aside for calibration.
- iv) Randomly selects a predetermined number of films to be used as controls to determine "background."
- v) Identifies each sample with the code number, date and the purpose for each, so that exposed TLD's from badges and both samples will be "read out" together.
- vi) Stores samples in protected location away from any exposure.

c. As appropriate, performer assembles badge inserts. May place two TLD's into insert.

- i) As appropriate performer marks each insert or TLD with the code number of the batch; may identify with appropriate staff member's name.
- ii) May place insert into holders marked with staff members' names.

4. If dosimeters are to be distributed, performer places the "new" inserts in appropriate shielded containers for distribution (such as separately by department, by staff title such as radiologists, nurses, radiologic technologists).

a. Performer may place all inserts together in a single shielded container.

List Elements Fully

b. May enter record of inserts prepared into log book.

c. May prepare log book for use in recording receipt of badge inserts currently being worn by staff and record of when "new" ones are received by staff.

d. As appropriate, performer places containers in appropriate location for mailing, pickup and distribution, or plans to take personally to appropriate staff member(s).

e. May plan to record and/or have recipient(s) sign for inserts.

Editor's note: The task of annealing or "quenching" the TLD's and storing them for use has not been written, but does exist as a separate task for the institution unless done in manufacturer's establishment.

TASK DESCRIPTION SHEET

Task Code No. 552

This is page 1 of 2 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Dosimetric packet inserts distributed; used inserts collected; matching samples obtained; film or TLD's sent or placed for processing and reading; distribution and/or collection recorded.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Personnel dosimetry log book; dosimetric badges; "new" and used film or TLD inserts; storage areas; sample films or TLD's;pen; shielded containers

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. **If "Yes" to q. 3:** Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Co-workers; supervisors; darkroom staff

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Collecting and/or distributing personnel monitoring dosimetric badge inserts and preparing for outside or in-house processing and reading, by distributing new inserts; collecting or receiving exposed inserts; obtaining appropriate samples for calibration and background control; placing for processing or for shipment; recording.

List Elements Fully

Performer collects personnel monitoring dosimetric badges while distributing new ones, receives exposed badges periodically, or receives late badges or those to have special check, and arranges to have inserts read and exposures recorded.

1. Performer receives or collects the dosimetric packets worn by staff members periodically or sporadically, such as those arriving late, due to unusual circumstances, or part of test procedures:
    a. Performer may collect personnel monitoring dosimetric badges or badge inserts periodically from supervisors.
    b. Performer may periodically collect badges or inserts personally.
        i) May take log book and an empty shielded container to individuals or supervisors.
        ii) May arrange to distribute "new" badges or inserts at the same time.
        iii) If collecting and distributing inserts or badges, may have staff member remove entire badge and place in shielded container, then locate newly prepared badge with staff member's name from other container, or does

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

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This is page 2 of 2 for this task.

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personally. May have staff member remove insert from badge, insert in container, find "new" insert, and replace in badge, or assists. Records in log book or has staff member sign name. Makes sure that date and name of staff member are recorded.

iv) Performer may check that inserts for all staff members are accounted for; may arrange to have missing inserts obtained.

c. Performer may receive late badges or inserts as a result of collection delay. Records as appropriate.

d. Performer may receive badges sporadically, such as when a staff member believes he or she was exposed to an unusual amount of radiation and a special check of dosage is to be calculated, or when dosimetry is part of a test procedure.

2. Performer notes whether the dosimetric packets contain dosimetric film or thermoluminescent dosimeters (TLD). Notes whether dosimeters are to be processed and read in-house or sent out.

3. Performer notes the code number of the TLD inserts (which relates to a given batch of TLD's annealed at the same time) or the emulsion number of the film inserts (which relates to a given batch of dosimetric films produced and tested at the same time).

   a. Uses code or emulsion number to locate the samples set aside earlier for calibration and determination of "background."
   b. Obtains film or TLD samples as appropriate, following standard procedure to avoid subjecting samples to light and/or heat. Places with exposed badge inserts.

List Elements Fully

4. Performer prepares used inserts and samples in shielded container for shipment to commercial service, or takes to proper area for in-house processing (by self or other staff member). May record.

TASK DESCRIPTION SHEET

Task Code No. 553

This is page 1 of 4 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Personnel film or TL dosimeters disassembled; batch processed with calibration and control samples after calibration exposures are made, recorded; background and calibration factors determined using densitometer or TL reader; personnel dosimeters read; background factor subtracted; calibration factor multiplied; personnel exposure recorded next to identification information and period reference; exposure reports placed for use.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Description of procedure; exposed dosimeter inserts; badge holders;matching sample films or TLD's; ID marker;film or TLD log book;report forms;density-exposure charts;exposure conversion charts;computer terminal,teletype;diagnostic x-ray machine,controls;tube rating chart;radiation detector;densitometer; film processor and controls;TLD reader,heating pan; acetic acid, acetone, cloth; graph paper; chart recorder

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; co-worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Reading and recording exposure from personnel monitoring film or thermoluminescent dosimeters by disassembling;obtaining proper samples;making calibration exposures;having samples and films processed together; reading TL or density background;reading calibration density or thermoluminescence using densitometer or TL reader;determining background and calibration factors;reading dosimeters;subtracting background factor,multiplying by calibration factor, or using similar procedure to obtain cumulative exposure; recording exposure and identification information; placing readings for further use.

List Elements Fully

Performer "reads" and records the exposure to which personnel radiation monitoring badges have been subjected (if this is part of an in-house program) periodically, or sporadically, such as when badge inserts are received late, or are being checked due to possible unusual exposure, or are part of a test procedure, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes the calibration, processing, and reading to be done depending on whether the dosimetry packets make use of personnel monitoring dosimetric film or thermoluminescent dosimeters (TLD).

   a. Notes the number of badge inserts to be processed and read and the purpose, such as regular personnel monitoring or for special check. Records period represented.

   b. Performer notes the code number of the TLD inserts (which relates to a given batch of TLD's annealed at the same time) or the emulsion number of the film inserts (which relates to a given batch of dosimetric films produced and tested at the same time).

      1) Separates dosimeters by emulsion or code number if more than one batch is involved.

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

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List Elements Fully

ii) Checks whether unexposed control and calibration samples are included for each different batch.

iii) If unexposed samples are not included, uses code or emulsion number for each batch to locate the samples set aside earlier for calibration and determination of "background." Obtains film or TLD samples as appropriate, following standard procedure to avoid subjecting samples to light and/or heat. Places with exposed badge inserts.

iv) Plans to calibrate, process and/or read samples and exposed dosimeters together for each separate batch.

c. Performer notes the appropriate calibration, processing, reading and recording steps to be taken for the film or TLD dosimeters.

i) Obtains and reviews any descriptions available of the steps to be followed, including, if appropriate, plotting, conversion charts, use of computer for calculations and record keeping.

ii) Notes the x-ray equipment to be used for calibration. Checks that the equipment itself has been calibrated and has received other standard radiographic system checks.

iii) Notes the number of exposures to be made for calibration, and the calibration exposure factors and filtration to use. Makes sure that all technical factors to be used are within safe limits of tube rating chart.

iv) Notes whether radiation detector such as ionization chamber and meter will be used to measure exposure for calibration, or whether a conversion chart will

List Elements Fully

be used. Checks that ion chamber to be used has been properly calibrated or has this done.

d. For film dosimetry, notes which densitometer and which processor have been designated for use.

i) Checks that the densitometer has been appropriately calibrated. Turns on power and allows time for unit to warm up.

ii) Checks that the film processor has been cleaned and checked, and is ready for use. Makes sure that developer, wash and cooling water are at appropriate temperatures, and that timer is set as appropriate for dosimetric film processing.

e. For TLD dosimetry, may prepare heating pan. May clean with acetic acid and acetone. Makes sure that there is uniform crystal distribution within the pan and maintains during calibration and reading.

f. Checks that any automatic charting equipment is calibrated.

g. Checks that any computer-teletype interface is functioning properly.

h. Performer disassembles the dosimeters as appropriate in controlled area such as darkroom. Makes sure that identification information is marked on each film or TLD. Prepares for processing. If dosimeter includes both an "open window" and a filtered film or TLD, separates or treats as appropriate, making sure that identification information is attached to each; may mark each with identification information.

2. Performer may proceed as follows to calibrate for readout:

TASK DESCRIPTION SHEET (continued)

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a. Obtains the unexposed dosimetric films or TLD's set aside for calibration of the dosimeter batch to be read. Prepares for exposure by inserting in holders if not already done; may attach markers to designate batch, date, and the calibration factors for each. May use more than one dosimeter for each calibration exposure.

b. Enters control room for designated x-ray machine. Checks to see that indicator light shows that x-ray machine is ready for use. Makes sure that it is warmed up and that all circuits have been stabilized. Checks line voltage meter and, if required, turns compensator dial until needle is aligned properly on line meter.

c. Sets filtration and technical factors (kVp, mA, time) and filtration for the first calibration exposure selected.

d. Places one or more dosimeters in holders on tabletop. May place radiation detector(s) next to dosimeters. Sets target-to-dosimeter distance as appropriate, and collimates to appropriate field area.

e. Makes first exposure; records mR exposure and removes dosimeter(s).

f. Performer continues for every other set of calibration exposure factors and filtration.

g. Obtains the unexposed dosimetric film(s) or TLD(s) set aside to determine background for the batch to be read. Identifies and places with the exposed calibration dosimeters.

h. If film dosimeters are to be read, performer assembles the exposed personnel dosimeters, the exposed calibration dosimeters and the unexposed control dosimeters as appropriate and has these processed together in the same processor, under the same conditions or decides to do personally.

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i) Performer obtains the processed calibrated films and unexposed processed sample film(s).

ii) Arranges calibration films in increasing order of exposure factor level, with the control, unexposed film first.

iii) Inserts each film in densitometer and records reading. Enters in form next to recorded exposure for the technical factors used.

iv) If using several dosimeter films for each technical factor setting (including unexposed films), calculates average density for each setting. Calculates average exposure if more than one radiation detector was used.

v) Records the density for the unexposed film (or average) as the background density.

vi) Subtracts the background density from the density reading of each of the calibration films (or averages). Records as net density.

vii) If not using radiation detector, performer converts exposure factors to exposure using appropriate conversion chart or form.

viii) Performer may prepare a calibration chart on which the net density is plotted against exposure in mR. Plots the net density against exposure for each of the calibration films from the recorded data; may prepare conversion chart for use with exposed personnel dosimeters; may calculate calibration factor and record.

ix) Depending on whether chart, table, or calibration factor

TASK DESCRIPTION SHEET (continued)

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will be used, performer subtracts background density from each personnel dosimetric film processed, estimates the exposure, and enters in record sheet next to the identification information for the film. May use computer. Makes sure period during which exposure was accumulated is entered.

i. If TLD dosimeters are to be read, performer places the exposed calibration dosimeters and the unexposed control dosimeter(s) as appropriate on the heater pan, or as appropriate to the heating system being used for the readout in TL output (nanocoulombs).

   i) Sets up TLD reader as appropriate for readout cycle including the settings for the appropriate temperature and time for the readout cycle.
   ii) Obtains the background TL reading for the unexposed TLD. Records. Averages and records if using more than one.
   iii) Obtains the TL reading for each calibration TLD. Averages if using more than one for each set of technical factors.
   iv) Performer subtracts the background TL reading or average from the calibrated TLD readings or averages to obtain net TL readings.
   v) Enters the net TL reading next to the recorded exposure (for the technical factors used) for each calibration TLD. Averages if appropriate.
   vi) Calculates a calibration factor by which net TL readings will be multiplied using appropriate statistical procedure; may prepare chart on which net TL

List Elements Fully

   readings are plotted against the mR exposure for each calibration point.
   vii) Performer may enter into computer the background factor to be subtracted from, and the calibration factor to be multiplied by, the TLD readout figures.
   viii) Calculates the estimated exposure for each personnel TLD using TLD reader calibrated to the factors obtained.
   ix) Enters the estimated exposure next to the identification information for each personnel TLD. Makes sure period to which it refers is entered.

j. Performer may read the "open window" film or TLD first and inspect. If "open window" reading is above a given minimum, may repeat procedure for the filtered film or TLD. Treats "open window" film or TLD reading as entrance exposure and second, filtered reading as penetrating exposure.

k. Performer may use computerized system to enter identification information and exposure reading on prepared report form.

3. When the dosimetric exposures have been recorded, performer places the empty badge holders or insert holders in appropriate location.

   a. Places the used films or TLD's in appropriate location.
   b. Places the exposure information in appropriate location for review and posting.
   c. May indicate that exposure readings are ready as appropriate.
   d. If any exposure readings appear unusually high, may bring this to attention of appropriate supervisor.

TASK DESCRIPTION SHEET

Task Code No. 554

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Data on personnel cumulative or single incident exposure levels recorded, evaluated against standards for maximum permissible dose levels, danger levels; meetings, interviews, reports to investigate and follow up initiated; regular report prepared.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Reports on exposure from personnel monitoring dosimeters; log book; posting forms; report forms; standards for maximum permissible doses, danger levels; phone; pen

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Supervisor; co-worker; clerical worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Entering, evaluating occupational radiation exposure data and initiating action on dangerous levels by obtaining records of exposure from personnel monitoring dosimeters for the period, in relation to single incidents, or testing; entering in record log and/or posting sheets; comparing with maximum permissible doses and danger levels; recording evaluation; initiating follow-up such as interviews to investigate and/or to have report made; preparing regular report(s).

List Elements Fully

Performer enters and evaluates records of staff occupational radiation exposures, and initiates follow-up actions on dangerous levels periodically, or when personnel monitoring records are reported late, or arrive as a result of a single incident, such as accident, or are a part of a test procedure.

1. Performer may receive or obtain staff radiation dose figures prepared by outside dosimeter-reading agency. Performer may receive or obtain staff radiation dose figures prepared as part of an in-house program. Performer may receive radiation dose figures prepared as part of special monitoring or test program.
   a. Checks the purpose of the readings and where figures should be recorded.
   b. Checks the type of evaluation to be done and to whom any reports should be sent.
   c. Checks on the number of readings and the staff names involved.
   d. If a periodic report is involved, such as cumulative exposure for the prior month, performer checks that the figures for all individuals being monitored for occupational radiation exposure are present.
      1) Notes whether late returns have been obtained, or may plan to calculate estimated dose as appropriate.

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 554

This is page 2 of 3 for this task.

List Elements Fully

May calculate estimated dose using current or comparable records; may assign a percentage of maximum permissible dose as appropriate.

2. Performer may obtain the log book of the cumulative occupational radiation doses for the period. May review radiation protection standards.

   a. Reviews the maximum permissible dose equivalents for the period length involved (such as month) for occupationally exposed persons. Notes the dose levels that are designated as danger points and warrant action such as notification meeting with individual or supervisor and/or reports such as to an appropriate government agency.
   b. Reviews the maximum permissible lifetime dose and the dose level designated as a danger point that warrants action, such as a report, notification, meeting.
   c. If exposure for a single incident or test is involved, performer reviews the dose levels that are the appropriate standards, notes the dosages that require follow-up, such as a report in connection with an accident or a single incident, or a check of equipment in connection with a test.

3. Depending on institutional procedures, performer enters the reported cumulative radiation dose received next to the name of the individual for the period under review. May cumulate as appropriate to bring lifetime occupational dose figures up to date.

   a. May enter in log book.
   b. May enter on list for posting.
   c. May enter on other report form.

4. Performer evaluates each reported or calculated dose figure and compares with

List Elements Fully

the relevant maximum permissible dose period and/or lifetime dose equivalents.

   a. Performer determines whether the exposure reported is within acceptable limits for the period, for the incident, or for the lifetime equivalence as appropriate. Records.
   b. If the exposure exceeds the maximum permissible dose for the period or is at a level requiring action, performer determines how to proceed, based on legislated or institutional requirements and the alert system being used at the institution.

5. Performer takes appropriate steps based on evaluation of the dosage levels.

   a. If part of regular personnel monitoring program, completes entry of records in log book. If appropriate, arranges to have figures reproduced, or copied and sent for posting, or decides to do personally.
   b. If appropriate, performer notifies any individuals whose single incident and/or cumulative dose levels require interviews.

      i) May dictate letter and/or use form letter arranging for an interview as soon as possible.
      ii) If appropriate, notifies individual's supervisor and arranges for interview.
      iii) May inform co-worker and arrange for co-worker to conduct interview(s), or decides to do personally.
      iv) May notify managerial staff that problem exists.
      v) If appropriate, arranges to have report(s) prepared as follow-up to the interview(s).

TASK DESCRIPTION SHEET (continued)

Task Code No. 554

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
c. If appropriate, makes sure that follow-up is carried out to obtain late badges and/or to check that meetings take place and reports are prepared and sent.	
d. For testing, may prepare report for appropriate staff person on special forms.	
e. Places records as appropriate for further use. May record that posting or record keeping has been done.	
f. May prepare reports for government as appropriate, such as quarterly or annual reports on exposure of individuals occupationally exposed. Arranges to have sent to appropriate agency.	

TASK DESCRIPTION SHEET

Task Code No. 555

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Staff interviewed on reasons for high occupational radiation exposure level; reasons found recorded; tests initiated; unsafe practices reported; report filled out and placed for distribution; medical examination requested.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Radiation report forms; personnel radiation exposure records; letter(s) informing staff of high radiation exposure levels; paper; pen; test or survey requisition forms; medical exam form

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Staff member with occupational x-ray radiation exposure; supervisor; managerial staff; clerical worker

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Investigating reasons for reported high occupational radiation exposure and initiating remediation by conducting interviews with staff members involved; investigating reasons; initiating tests; reporting unsafe practices; arranging for medical examination of staff person; preparing report on what was done; and placing for distribution.

List Elements Fully

Performer investigates possible reasons for reported high occupational radiation exposures as a result of:

a. Regular assignment.
b. Request from supervisor or co-worker.
c. Decision to do.

1. Performer may decide or be requested to conduct an interview with a staff member for any of the following reasons:
   a. Periodic personnel monitoring report on occupational exposure for the period seemed unusually high or was above the maximum permissible dose equivalent for the period.
   b. The staff member or another individual reported a single incident of possible excessive exposure, and this was supported by evidence from the staff member's monitoring dosimeter.
   c. The cumulative lifetime exposure for the staff member is approaching or has reached the maximum permissible lifetime level.
   d. Performer may decide or be requested to interview the supervisor of the staff member involved.
2. Performer makes note of the time and place of the meeting, whether the meeting will be with the staff person

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6. Check here if this is a master sheet..(x)

TASK DESCRIPTION SHEET (continued)

Task Code No. 555

This is page 2 of 3 for this task.

List Elements Fully

involved, and/or with staff person's supervisor.

a. Reviews the letter requesting the interview.
b. May review the radiation exposure figures for the period, for the incident, and/or for other members of the department for the period, and/or over time.
c. May investigate the situation involved if there was a special incident; may review regular departmental safe practices and requirements.

3. Performer meets with the staff member and/or the supervisor in charge at the appropriate time.

   a. Explains the reason for the interview and the objective to be accomplished.

      i) Explains that there may be exposure to which the personnel monitoring device was subjected while the staff member was not wearing the badge, that a possible failure of equipment or shielding could be involved, that unusual activities by the staff member could be involved, that inadequate protection practices could be the reason.
      ii) Explains the need to find the reason(s) for the exposure level.
      iii) If appropriate, explains the possibility that the staff person may be required to transfer to work which does not involve exposure to radiation or other appropriate change.
      iv) When discussing with a senior staff member such as a radiologist, tries to be sensitive to the fact that the person's chosen profession is involved, but remains firm on the protection requirements involved and the

List Elements Fully

need to protect the staff member and/or the persons working under the staff member's direction.
      v) When discussing with staff member, may determine whether the individual understands the reasons for the safety standards; may explain dangers of personnel exposure to radiation, effects in terms of radiation sickness, genetic mutation, general effect on the genetic pool, dangers to the fetus, lifetime cumulative effects. May refer to the current standards in the protection program for maximum permissible dose equivalents.

   b. Performer tries to determine the reason for the excessive exposure by questioning the staff member and/or the relevant supervisor.

      i) May ask about possible artifact reading, such as when the dosimeter is subjected to exposure when the staff person is not wearing the badge. Asks where the badge was worn, such as on apron or uniform. Asks where the garment was stored or left during the period in question. Notes whether dosimeter could have been left near examination table, been hung in the path of primary beam, could have been subjected to radiation while not on the staff member's person. Records answers.
      ii) May ask about any incident or circumstances reported by the staff member or another individual to determine the nature of any accident such as equipment safety failure, structural

TASK DESCRIPTION SHEET (continued)

Task Code No. 555

This is page 3 of 3 for this task.

List Elements Fully

damage, radioactive spillage, malfunction of safety doors and barriers.

iii) May ask about possible unsafe practices, such as performer remaining in room during exposure unnecessarily, holding patient during exposure, not wearing shielding apron or gloves when remaining in room during exposure to carry out necessary tasks, standing in the path of the primary beam, or placing parts of the body in the path of the beam.

iv) If new equipment may be involved, may question about the path of the central beam, such as with rotating equipment; may note possible danger area with respect to deployment of personnel.

v) May ask about any unusual work patterns on the part of the staff member, such as a transfer to a work area with higher occupational radiation levels, overtime work by staff member.

vi) When discussing high lifetime dose levels, may inquire about the staff member's occupational exposure history, past experience with excessive exposure levels; may ask about staff member's medical history, such as recent diagnostic x-ray examinations, possible exposure to other types of radiation such as a nuclear medicine procedure or in radiotherapy.

4. Performer records what was determined from the interview(s) with respect to the reason for the high reported exposure, including anything still unexplained.

5. Depending on whether reasons are still unexplained or problem has been pinpointed, performer may take any of the following steps:

List Elements Fully

a. May initiate a series of tests to find or to confirm that the x-ray equipment and/or safety or interlock devices are malfunctioning.
b. May institute a check of the adequacy of the structural primary and secondary shielding barriers.
c. May institute a check of the radiation field in and around x-ray equipment installations.
d. May report on unsafe practices and request appropriate action to enforce use of shielding, remaining out of examination room, or proper deployment of staff in room.
e. Depending on the seriousness of the individual's cumulative dose level, performer may initiate action to have performer transferred to work involving less or no occupational radiation exposure. Discusses with staff member.
f. If not already done, may initiate a request to have staff member given medical examination at once or may suggest this to appropriate staff member.

6. After the investigation and results are obtained, and/or as soon as required by law or institutional procedures, performer may fill out appropriate report for submission to federal, local, and/or institutional authorities describing the incident and/or exposure level, indicating the reason, and reporting the steps taken to remedy the situation, the steps taken to prevent a recurrence of the problem, and the steps taken to deal with the staff member's personal situation. Places as appropriate for distribution to appropriate agencies.

TASK DESCRIPTION SHEET

Task Code No. 556

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

X-ray equipment test, survey, or measuring instruments calibrated or sent for repair; calibration recorded.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Diagnostic x-ray test, survey, or measuring instruments; calibration filter, instruments; calibration instructions; report forms; pen; phone; out-of-order sign

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Repair personnel

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Calibrating diagnostic x-ray test, survey, or measuring instruments, by following standard procedures, using appropriate instruments; calculating correction factor; deciding on repair; recording calibration.

List Elements Fully

Performer calibrates exposure detection instruments such as ionization chamber integrating radiation meter, radiation rate meter, survey meter, and/or electrical measuring instruments, and/or densitometer, and/or sensitometer periodically or when a problem seems to be present, as a result of:

a. Regular assignment.
b. Request.
c. Decision to do.

1. Performer notes which instrument is to be calibrated.
   a. Obtains the instrument, descriptions of calibration steps appropriate to instrument, such as manufacturer's instructions, in-house procedures. Obtains appropriate record forms.
   b. Obtains any equipment needed for the calibration such as radioactive source, other test instruments, depending on the instrument to be calibrated. Observes radiation protection safe practices if using radioactive source. For densitometer, uses the density test filter supplied by the manufacturer.
2. Performer carries out appropriate calibration steps.
   a. Makes appropriate adjustments.
   b. Repeats for all relevant modalities.

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TASK DESCRIPTION SHEET (continued)

Task Code No. 556

This is page 2 of 2 for this task.

List Elements Fully

- c. Calculates any correction factor as appropriate.
- d. May decide that equipment cannot be calibrated and is in need of repair.

3. Records what was done, readings obtained, any correction factor calculated. May arrange to have instrument repaired or sent for repair. Places out-of-order sign on instrument if appropriate.

4. Returns any test materials as appropriate.

Editor's Note:
Because of the variety of equipment possible, this task is presented in rough outline form only.

List Elements Fully

TASK DESCRIPTION SHEET

Task Code No. 557

This is page 1 of 2 for this task.

1. **What is the output of this task?** (Be sure this is broad enough to be repeatable.)

Recommendations made or information presented on diagnostic x-ray equipment in terms of cost, characteristics, specifications, in comparison with institutional needs and current facilities.

2. **What is used in performing this task?** (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Information on institutional facilities; manufacturers' specifications for diagnostic x-ray equipment; pen; paper

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Radiologists; chief radiologic technologist

5. **Name the task** so that the answers to questions 1-4 are reflected. Underline essential words.

Collecting and presenting technical information about and/or recommending new diagnostic x-ray equipment by determining institutional and safety needs, current capacities; collecting information on equipment available, costs, installation requirements; making suggestions; presenting opinions; recording.

List Elements Fully

Performer provides or collects information and provides technical opinions about diagnostic x-ray equipment contemplated for purchase in response to request.

1. Performer inquires about and considers the need for the equipment, such as the type of examinations which x-ray equipment must be prepared to handle.

2. Performer may note current legislation and institutional standards on radiation protection and equipment safety requirements.

3. Performer may obtain information about existing areas in the institution contemplated for the installation. Considers the available power supply, outlets, electric circuitry, heating, air conditioning, ventilation, humidity control systems. May note the structural shielding already in place.

4. Obtains information on the types of equipment available.
    a. May visit manufacturers to check personally on equipment contemplated.
    b. May have a representative of manufacturing company visit, and discuss the capabilities of the equipment in question.
    c. May obtain literature on available equipment. May consult catalogues pub-

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 557

This is page 2 of 2 for this task.

List Elements Fully	List Elements Fully
lished by equipment manufacturers, make notes on both standard and optional accessories available with equipment. d. Performer may attend professional conferences where new equipment and/or new technological features are introduced and explained. May ask questions or take notes during demonstrations. 5. Performer evaluates the installation requirements and costs of the equipment under review and compares with existing facilities and the needs of the institution. Considers the range of functions equipment will provide; considers safety aspects. Performer may involve members of the staff in evaluating and/or observing possible types of equipment, such as chief radiologic technologist, radiologist. 6. Performer comes to conclusions on the benefits and costs of the equipment being considered in light of the institution's needs and any radiation protection considerations. a. Presents opinions to appropriate staff. b. Discusses. c. Answers questions. d. May prepare and present formal or informal report. e. May involve other staff members in preparation and/or presentation.	

TASK DESCRIPTION SHEET

Task Code No. 558

This is page 1 of 3 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Quality assurance, radiation protection and preventive maintenance tasks in diagnostic radiology shown to trainee, explained; person being trained evaluated for readiness to do tasks under supervision; person observed and criticized; trainee evaluated for readiness to do tasks without direct supervision; trainee's work spot-checked; questions answered; opinions on work given as requested; evaluation noted formally, informally, and/or reported.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Equipment and materials used in diagnostic radiology; test materials and equipment; maintenance, test procedure descriptions; records; record forms; pen; paper

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Staff of radiology department, such as radiologic technologist, junior physicist, resident; students; radiologist or supervisor

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Providing clinical training for staff in a diagnostic radiology department in quality assurance tests of equipment, in radiation protection procedures, and related maintenance by demonstrating procedures such as calibration, safety conformance tests, film processor monitoring, tests of patient exposure rates, calculations of structural shielding requirements, making radiation protection survey tests, steps of personnel monitoring program, preventive maintenance; explaining what is being done; answering questions; deciding when staff can perform tasks under direct supervision; observing and correcting; advising as requested or as deemed necessary.

List Elements Fully

Performer provides clinical training for students or staff members in quality assurance, machine maintenance and testing, and/or radiation protection program procedures in diagnostic radiology as a result of:

a. Regular assignment to train individuals.
b. Request to train student, staff member or new employee in current or newly instituted procedures, or tasks involving new equipment.
c. Request by staff member for information about the work.

1. Performer provides demonstration, explanation, informal evaluation, and/or supervision in any or all of the following, depending on the duties assigned to the staff member to be trained or the instruction to be provided by the performer:

   a. Equipment and quality assurance tests, such as calibration, field limitation, alignment, distance tests, safety checks, determination of focal spot size and location, tests of automatic controls, preventive maintenance, tests of mechanical operation, resolution, estimation of HVL, monitoring film processors, determining exposure characteristics of films, calibrating test instruments.
   b. Tests related to radiation protection, such as monitoring patient and entrance

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 558

This is page 2 of 3 for this task.

List Elements Fully

exposure rates, determining primary and secondary structural shielding requirements, checking safety controls, checking leakage, barrier transmitted radiation, scatter radiation. Conducting personnel radiation protection tasks such as preparation, distribution, collection, calibration, reading of personnel monitoring dosimeters, recording results.

2. Performer reviews the background of the individuals to be taught, the tasks to be taught, the equipment to be covered, and the relevant performance standards.

3. If performer is making a new presentation of any task, performer may select times, situations and procedures to demonstrate; performer may train while carrying out own tasks:

   a. When performer has person being trained present during performer's own tasks, performer may explain purpose to anyone else present and ask permission to have trainee present.
   b. Performer explains to trainee what will be taught.
   c. Performer may narrate the steps, may explain what is being done, or may explain the basis for decisions and actions.
   d. Performer may decide to solicit questions to find out what the person being trained understands, may answer questions, or may elaborate on the explanation of what is being done, concentrating on the relevant skills and knowledges.
   e. Performer decides when the person being trained has observed sufficiently and has a clear enough understanding of a procedure to carry it out under close, direct supervision and/or to assist.

List Elements Fully

4. Performer supervises and observes the person being trained while he or she carries out the activities assigned:

   a. Performer asks the individual to do all or part of the task and observes or carries out own portion and watches the performance of the assigned activity.
   b. While observing, performer decides whether the activity is being done properly, whether there is a specific problem, whether there is need to demonstrate the procedure again or explain, and does so.
   c. Performer may comment on the performance, encourage or correct as deemed necessary, or do this later.
   d. Performer may decide to intervene and take over the procedure, explaining what was done incorrectly at that point or later.
   e. If decision is to demonstrate again, performer may redo and have the person being trained observe; may have the procedure repeated until it is done properly.
   f. Performer decides which procedures or activities can be done by the individual without direct supervision. Informs proper supervisors, notes for own use, and/or tells this to the person being trained.

5. Performer spot checks the person being trained while he or she carries out activities without direct supervision, or responds to requests for guidance, assistance, or further instruction. Performer proceeds as in steps 3 or 4 as appropriate, observing, noting areas needing improvement, determining the nature of any problem, assisting, giving opinions, answering questions, and providing further instruction on how to deal with unusual circumstances. Reinforces correct work. Suggests areas for improvement.

TASK DESCRIPTION SHEET (continued)

Task Code No. 558

This is page 3 of 3 for this task.

List Elements Fully	List Elements Fully
6. Performer informally notes the extent of learning or proficiency of the person being trained throughout the training: a. May decide to discuss performance with individual at any time. b. May keep formal records on what was taught or on progress. c. May make personal notes for own use in later evaluation meetings or in discussion with supervisor of person being trained or person at student's school in charge of clinical training. d. May decide to revise instruction or performance standards.	

TASK DESCRIPTION SHEET

Task Code No. 559

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Content, outline, method of presentation selected for lecture or laboratory session; instructional materials prepared; presentation made; question and answer session led; student participation evaluated; notes made.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Laboratory or classroom instructional materials, reading materials, records; radiographic materials in physics, diagnostic radiology; pen; paper

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant condition; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Students in diagnostic radiology, radiologic technology, medical school, nursing, medical sciences; interns; residents; staff in diagnostic radiology; director of program

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Planning and presenting lectures and/or related laboratory sessions on radiation and/or health physics for students in professional programs for diagnostic radiology, in medical school, or in medical sciences by selecting or ascertaining content; determining level of detail, method of presentation; selecting instructional materials; arranging to have instruments and materials assembled; making presentation; conducting question and answer session; being aware of responses and adjusting to students' needs; evaluating students; recording if appropriate.

List Elements Fully

Performer presents lectures and/or related laboratory sessions on the physics relevant for diagnostic radiology (such as radiation physics, medical physics, basic principles of physics, ionizing radiation, electricity, radiographic analysis, film processing chemistry), for occupational programs such as in nursing, radiologic technology, radiology, or for medical school or medical sciences students, interns, residents, and/or to interested staff members.

1. Performer is notified of the topic assignment, or decides what should be covered.
   a. Considers the depth and degree of detail to cover based on the occupational objectives of the program, the students' current academic level, the required content reflected in current board or other professional examinations, and the objectives of the educational or clinical institution.
   b. If assigned topic, performer may request change of time or topic; discusses with program director.
   c. In planning laboratory sessions, considers relevance for probable clinical applications, current institutional practices, current safety and quality assurance standards, legislation, new developments in the field.

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 559

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d. In planning lectures, considers the broad theoretical material needed as a frame of reference for clinical applications.

2. Performer decides on the method of presentation, such as laboratory session, lecture, seminar. Considers use of radiographs, presentation of test instruments, simulation of clinical settings.

   a. Prepares outline.
   b. May obtain special instructional materials or asks co-worker to obtain and reviews. May use materials already prepared.
   c. May do research in topic area for use in lecture.
   d. May prepare audiovisual materials from own source or may obtain existing materials.
   e. Performer may choose materials to contrast proper and faulty practices.
   f. May use past professional examination questions as part of review sessions.
   g. Decides on time to allocate for questions and answers.
   h. Arranges to have all the materials needed present in laboratory or lecture room.

3. Performer conducts laboratory session as appropriate; presents objectives; observes the students; answers questions and assists as appropriate.

   Presents lecture as deemed appropriate. Attempts to note whether information is being understood and adjusts presentation accordingly.

   a. Uses instructional material, answers questions, depending on plans.
   b. Leads discussions.
   c. May recommend additional reading.
   d. May throw out provocative questions to have students learn how to use

List Elements Fully

the material to solve realistic problems.

   e. Performer evaluates and responds to questions and answers. Chooses how to present answers and comments so students will understand how answers were arrived at. May recommend additional reading.
   f. May make note of any outstanding students and may report this to person in charge of program. May keep materials and notes prepared for future use.

Editor's Note:

Tasks for preparation of tests, grading, and submission of students' grades would also exist, but have not been written. Those would be broad tasks applicable to many situations.

TASK DESCRIPTION SHEET

Task Code No. 560

This is page 1 of 2 for this task.

1. What is the output of this task? (Be sure this is broad enough to be repeatable.)

Radiation protection and quality assurance practices or requirements presented, demonstrated, explained.

2. What is used in performing this task? (Note if only certain items must be used. If there is choice, include everything or the kinds of things chosen among.)

Radiation protection requirements; radiation protection, quality assurance literature; equipment in diagnostic radiology; pen; paper

3. Is there a recipient, respondent or co-worker involved in the task? Yes...(X) No...( )

4. If "Yes" to q. 3: Name the kind of recipient, respondent or co-worker involved, with descriptions to indicate the relevant conditions; include the kind with whom the performer is not allowed to deal if relevant to knowledge requirements or legal restrictions.

Staff or students in diagnostic radiology

5. Name the task so that the answers to questions 1-4 are reflected. Underline essential words.

Preparing lectures or participating in meetings of staff members in diagnostic radiology on radiation protection and quality assurance requirements and practices, by selecting and preparing presentations; demonstrating or presenting practices; providing information on reasons for and descriptions of safe practice procedures, provisions for quality assurance; relating content to tasks of various staff members; participating in discussions.

List Elements Fully

Performer presents lectures or makes presentations at meetings to staff or students in diagnostic radiology on topics in quality assurance and radiation health protection as a result of:

a. Regular assignment.
b. Request.
c. Decision to raise relevant information.

1. Performer may select and prepare presentation:
   a. May select presentation(s) describing new or existing legislation affecting x-ray equipment standards, radiographic procedures, patient and/or staff exposure monitoring, film processing, radiation protection safe practices.
   b. May select presentation describing the effects of requirements or current practices and/or deviations from acceptable standards in terms of patient exposure, diagnostic reliability, legislatively determined practices.
   c. May select presentations on the effects of proper collimation, use of patient and staff shielding on radiation dosage, proper deployment of staff.
   d. May select presentation on the underlying reasons for safety and quality standards in terms of biological effects, such as with

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6. Check here if this is a master sheet..(X)

TASK DESCRIPTION SHEET (continued)

Task Code No. 560

This is page 2 of 2 for this task.

List Elements Fully

List Elements Fully

cumulative individual exposure, fetal exposure, genetic effect for the individual, population gene pool.

e. Performer may keep abreast of new developments in the field and reports on research in the area, or may decide to do a literature review on request or periodically and present.

2. Performer may prepare presentation in terms of each occupation involved, such as radiologist, radiologic technologist, nurse, darkroom aide, and describe how any or each can function to provide maximum radiation protection, quality control. Plans to describe how this can be done, the importance, the consequences if not carried out for the patients, staff, and institution.

   a. Covers proper use of the equipment, proper collimation, proper deployment of staff, use of shielding devices for gonads, sensitive organs.
   b. May include need to refrain from making more than minimum number of exposures for diagnostic requirements, reduction in routine prescription of radiographs without review.
   c. May include the role of a proper monitoring program for film processors.

3. Performer may select method of presentation and prepare presentation.

   a. Performer decides what to present and in what degree of depth and detail.
   b. Decides on how to make presentation and what to use.
   c. May prepare outline, obtain special instructional materials, do research on topic for use in presentation.
   d. At lecture or meeting, when performer is called upon, makes presentation. Participates in question and answer period and discussion. Makes relevant points so as to instruct the audience in the reasoning involved. May suggest reference articles on subject.
   e. Performer may, when appropriate, demonstrate or simulate new and/or relevant safety or quality assurance techniques, procedures, or use of new equipment.